# 2004 Chevrolet Cavalier Owner Manual


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This manual includes the latest information at the time it was printed. We reserve the right to make changes after that time without further notice. For vehicles first sold in Canada, substitute the name “General Motors of Canada Limited” for Chevrolet Motor Division whenever it appears in this manual.

Please keep this manual in your vehicle, so it will be there if you ever need it when you’re on the road. If you sell the vehicle, please leave this manual in it so the new owner can use it.

## Canadian Owners

You can obtain a French copy of this manual from your dealer or from:

Helm, Incorporated
P.O. Box 07130
Detroit, MI 48207

## How to Use This Manual

Many people read their owner’s manual from beginning to end when they first receive their new vehicle. If you do this, it will help you learn about the features and controls for your vehicle. In this manual, you will find that pictures and words work together to explain things.

## Index

A good place to look for what you need is the Index in back of the manual. It is an alphabetical list of what is in the manual, and the page number where you will find it.

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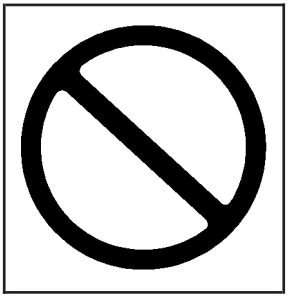
## Safety Warnings and Symbols

You will find a number of safety cautions in this book. We use a box and the word CAUTION to tell you about things that could hurt you if you were to ignore the warning.

**⚠ CAUTION:**

**These mean there is something that could hurt you or other people.**

In the caution area, we tell you what the hazard is. Then we tell you what to do to help avoid or reduce the hazard. Please read these cautions. If you don't, you or others could be hurt.



You will also find a circle with a slash through it in this book. This safety symbol means "Don't," "Don't do this" or "Don't let this happen."

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## Vehicle Damage Warnings

Also, in this book you will find these notices:

***Notice:*** **These mean there is something that could damage your vehicle.**

A notice will tell you about something that can damage your vehicle. Many times, this damage would not be covered by your warranty, and it could be costly. But the notice will tell you what to do to help avoid the damage.

When you read other manuals, you might see CAUTION and NOTICE warnings in different colors or in different words.

You'll also see warning labels on your vehicle. They use the same words, CAUTION or NOTICE.

## Vehicle Symbols

Your vehicle has components and labels that use symbols instead of text. Symbols, used on your vehicle, are shown along with the text describing the operation or information relating to a specific component, control, message, gage or indicator.

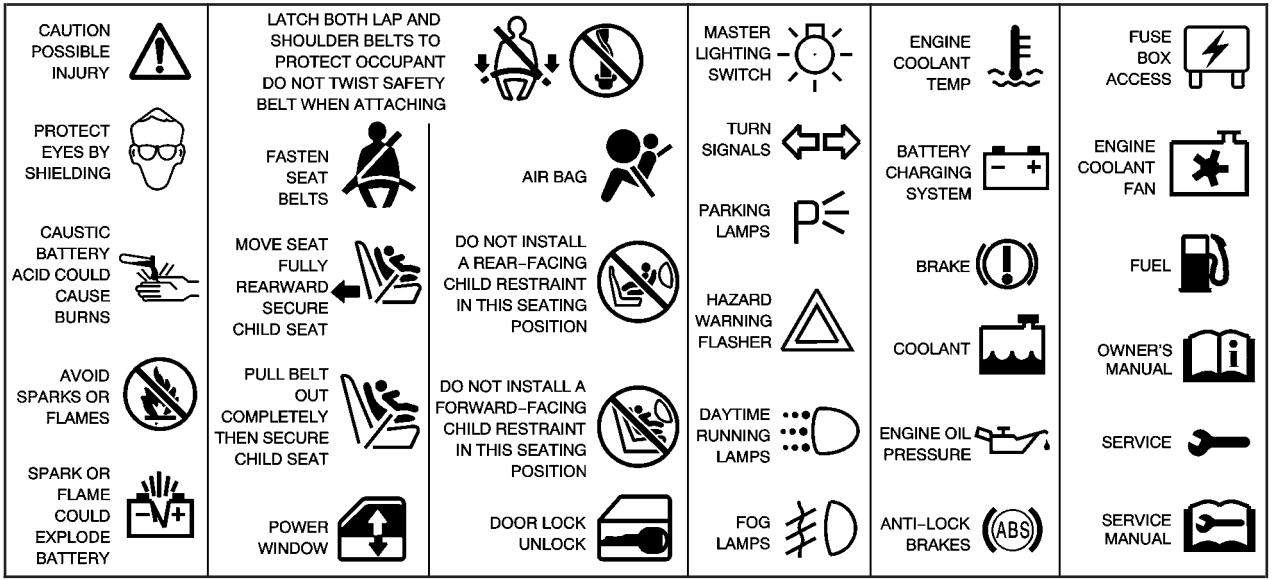
If you need help figuring out a specific name of a component, gage or indicator, reference the following topics:

- Seats and Restraint Systems in Section 1
- Features and Controls in Section 2
- Instrument Panel Overview in Section 3
- Climate Controls in Section 3
- Warning Lights, Gages and Indicators in Section 3
- Audio System(s) in Section 3
- Engine Compartment Overview in Section 5



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These are some examples of vehicle symbols you may find on your vehicle:




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## NOTES



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# Section 1 Seats and Restraint Systems


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# Front Seats

## Manual Seats

**⚠ CAUTION:**

**You can lose control of the vehicle if you try to adjust a manual driver's seat while the vehicle is moving. The sudden movement could startle and confuse you, or make you push a pedal when you don't want to. Adjust the driver's seat only when the vehicle is not moving.**



Lift the lever located on the front of the driver's seat to unlock it. Slide the seat to where you want it and release the lever. Then try to move the seat with your body, to make sure the seat is locked into place.

Your vehicle will be equipped with one of the following passenger seat adjusters.



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If your vehicle is not equipped with easy entry seats, your passenger seat adjuster looks like this. Slide the lever located under the passenger's seat to the right to unlock it. Slide the seat to where you want it and release the lever. Then try to move the seat with your body, to make sure the seat is locked into place.



If your vehicle is equipped with easy entry seats, this is your front passenger seat adjuster. Pull up on the lever located at the front of the passenger's seat to unlock it. Slide the seat to a comfortable position and release the lever. Then try to move the seat with your body, to make sure the seat is locked into place.

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## Reclining Seatbacks



To adjust the seatback, lift the lever located on the outboard side of the seat and move the seatback to where you want it. Release the lever and push rearward on the seatback to make sure it is locked. Pull up on the lever without pushing on the seatback and the seatback will go to an upright position.



But don't have a seatback reclined if your vehicle is moving.



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## ⚠ CAUTION:

**Sitting in a reclined position when your vehicle is in motion can be dangerous. Even if you buckle up, your safety belts can't do their job when you're reclined like this.**

**The shoulder belt can't do its job because it won't be against your body. Instead, it will be in front of you. In a crash you could go into it, receiving neck or other injuries.**

**The lap belt can't do its job either. In a crash the belt could go up over your abdomen. The belt forces would be there, not at your pelvic bones. This could cause serious internal injuries.**

**For proper protection when the vehicle is in motion, have the seatback upright. Then sit well back in the seat and wear your safety belt properly.**

## Head Restraints



Adjust your head restraint so that the top of the restraint is closest to the top of your head. This position reduces the chances of a neck injury in a crash.

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## Seatback Latches

If your vehicle is a two-door model, the front seatback folds forward to let people get into the back seat.



To fold a front seatback forward, lift the latch located on the lower back side of the seatback and push the seatback forward.

When you return the seatback to its original position, make sure the seatback is locked. The latch must be down for the seat to work properly.

**⚠ CAUTION:**

**If the seatback isn't locked, it could move forward in a sudden stop or crash. That could cause injury to the person sitting there. Always press rearward on the seatback to be sure it is locked.**

## Easy Entry Seat

**⚠ CAUTION:**

**If the easy entry right front seat isn't locked, it can move. In a sudden stop or crash, the person sitting there could be injured. After you've used it, be sure to push rearward on an easy entry seat to be sure it is locked.**

If your vehicle has this feature, the right front seat makes it easy to get in and out of the rear seat.

1. Lift the right front seatback latch to release the seatback.
2. Tilt the seatback completely forward and the whole seat will slide forward.
3. Move the right front seatback to its original position after someone gets into the rear seat area.
4. Then move the seat rearward until it locks.

Tilt the seatback completely forward again and move the seat to get out of the back seat.



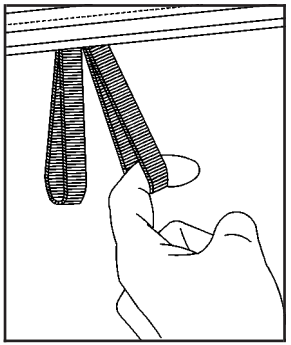
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# Rear Seats

## Rear Seat Operation

### Folding the Seatback

To fold the seatback, do the following:



1. Pull the release straps located in the trunk. The right strap operates the passenger's side rear split seat. The left strap operates the driver's side rear split seat.

2. Fold the seatback down from the inside of the vehicle.

**⚠ CAUTION:**

**If the seatback isn't locked, it could move forward in a sudden stop or crash. That could cause injury to the person sitting there. Always press rearward on the seatback to be sure it is locked.**

**⚠ CAUTION:**

**A safety belt that is improperly routed, not properly attached, or twisted won't provide the protection needed in a crash. The person wearing the belt could be seriously injured. After raising the rear seatback, always check to be sure that the safety belts are properly routed and attached, and are not twisted.**

To raise the seatback, push the seatback up to return it to its original position.

Push and pull on the seatback to make sure it is latched securely in the fully upright position.

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# Safety Belts

## Safety Belts: They Are for Everyone

This part of the manual tells you how to use safety belts properly. It also tells you some things you should not do with safety belts.

**⚠ CAUTION:**

**Don't let anyone ride where he or she can't wear a safety belt properly. If you are in a crash and you're not wearing a safety belt, your injuries can be much worse. You can hit things inside the vehicle or be ejected from it. You can be seriously injured or killed. In the same crash, you might not be, if you are**

**CAUTION: (Continued)**

**CAUTION: (Continued)**

**buckled up. Always fasten your safety belt, and check that your passengers' belts are fastened properly too.**

**⚠ CAUTION:**

**It is extremely dangerous to ride in a cargo area, inside or outside of a vehicle. In a collision, people riding in these areas are more likely to be seriously injured or killed. Do not allow people to ride in any area of your vehicle that is not equipped with seats and safety belts. Be sure everyone in your vehicle is in a seat and using a safety belt properly.**



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Your vehicle has a light that comes on as a reminder to buckle up. See *Safety Belt Reminder Light on page 3-23*.

In most states and in all Canadian provinces, the law says to wear safety belts. Here's why: *They work*.

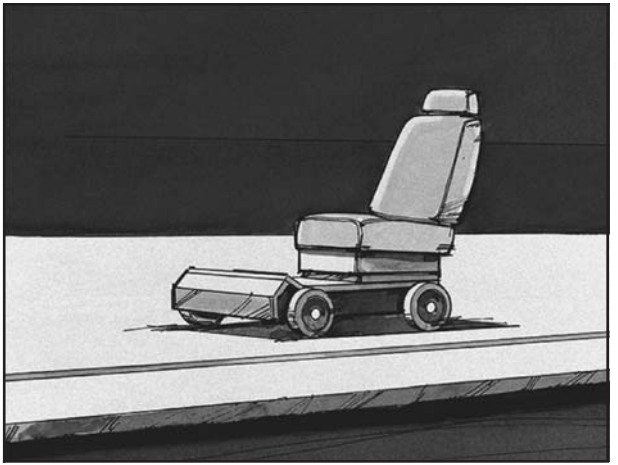
You never know if you'll be in a crash. If you do have a crash, you don't know if it will be a bad one.

A few crashes are mild, and some crashes can be so serious that even buckled up, a person wouldn't survive. But most crashes are in between. In many of them, people who buckle up can survive and sometimes walk away. Without belts they could have been badly hurt or killed.

After more than 30 years of safety belts in vehicles, the facts are clear. In most crashes buckling up does matter... a lot!

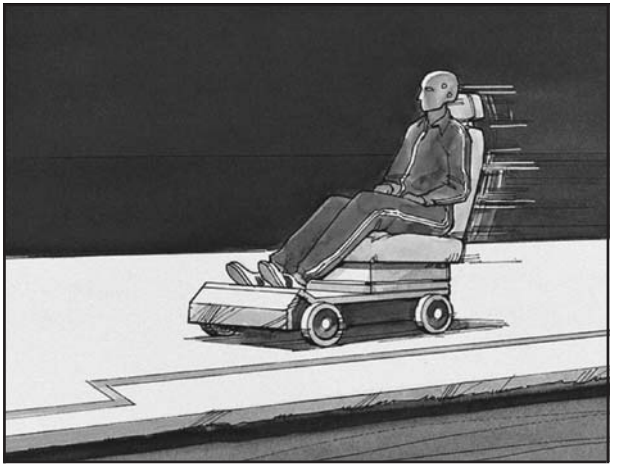
## Why Safety Belts Work

When you ride in or on anything, you go as fast as it goes.

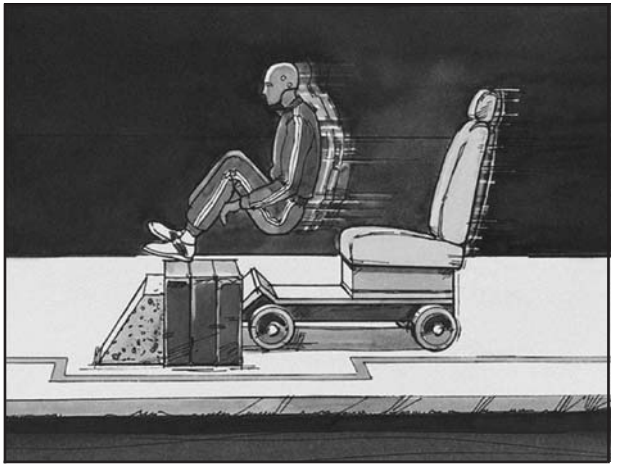


Take the simplest vehicle. Suppose it's just a seat on wheels.

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Put someone on it.



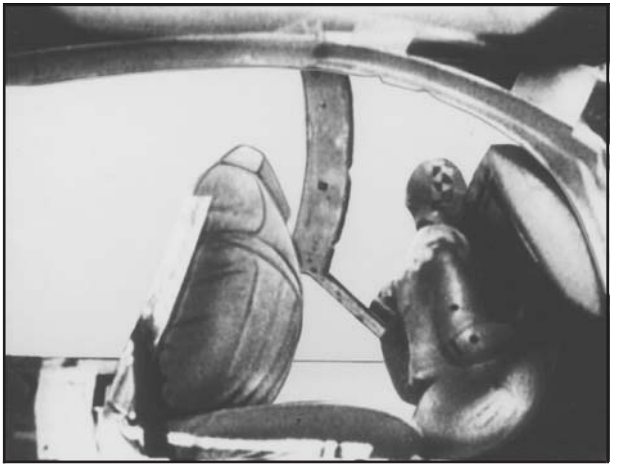
Get it up to speed. Then stop the vehicle. The rider doesn't stop.



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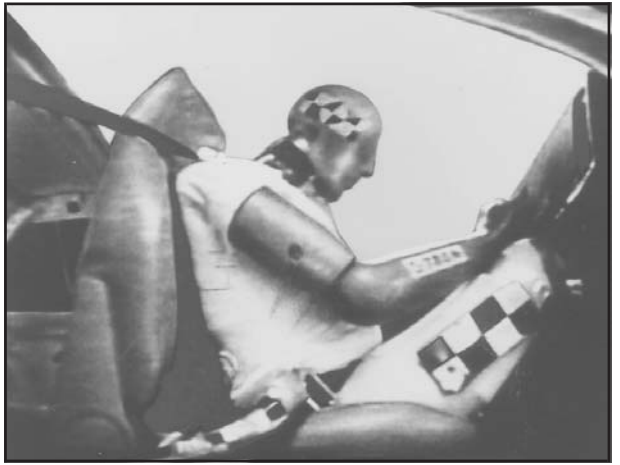


The person keeps going until stopped by something. In a real vehicle, it could be the windshield...



or the instrument panel...

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or the safety belts!

With safety belts, you slow down as the vehicle does. You get more time to stop. You stop over more distance, and your strongest bones take the forces. That's why safety belts make such good sense.

## Questions and Answers About Safety Belts

**Q: Won't I be trapped in the vehicle after an accident if I'm wearing a safety belt?**

**A:** You *could* be – whether you're wearing a safety belt or not. But you can unbuckle a safety belt, even if you're upside down. And your chance of being conscious during and after an accident, so you *can* unbuckle and get out, is *much* greater if you are belted.



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**Q: If my vehicle has air bags, why should I have to wear safety belts?**

**A:** Air bags are in many vehicles today and will be in most of them in the future. But they are supplemental systems only; so they work *with* safety belts – not instead of them. Every air bag system ever offered for sale has required the use of safety belts. Even if you're in a vehicle that has air bags, you still have to buckle up to get the most protection. That's true not only in frontal collisions, but especially in side and other collisions.

**Q: If I'm a good driver, and I never drive far from home, why should I wear safety belts?**

**A:** You may be an excellent driver, but if you're in an accident – even one that isn't your fault – you and your passengers can be hurt. Being a good driver doesn't protect you from things beyond your control, such as bad drivers.

Most accidents occur within 25 miles (40 km) of home. And the greatest number of serious injuries and deaths occur at speeds of less than 40 mph (65 km/h).

Safety belts are for everyone.

## How to Wear Safety Belts Properly

This part is only for people of adult size.

Be aware that there are special things to know about safety belts and children. And there are different rules for smaller children and babies. If a child will be riding in your vehicle, see *Older Children on page 1-29* or *Infants and Young Children on page 1-31*. Follow those rules for everyone's protection.

First, you'll want to know which restraint systems your vehicle has.

We'll start with the driver position.

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## Driver Position

This part describes the driver's restraint system.

## Lap-Shoulder Belt

The driver has a lap-shoulder belt. Here's how to wear it properly.

1. Close and lock the door.
2. Adjust the seat so you can sit up straight. To see how, see "Seats" in the Index.



3. Pick up the latch plate and pull the belt across you. Don't let it get twisted.

   The shoulder belt may lock if you pull the belt across you very quickly. If this happens, let the belt go back slightly to unlock it. Then pull the belt across you more slowly.
4. Push the latch plate into the buckle until it clicks.

   Pull up on the latch plate to make sure it is secure. If the belt isn't long enough, see *Safety Belt Extender on page 1-28*.

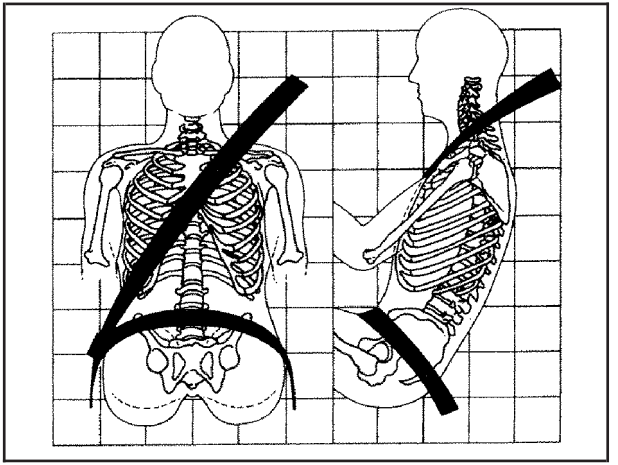
   Make sure the release button on the buckle is positioned so you would be able to unbuckle the safety belt quickly if you ever had to.



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5. To make the lap part tight, pull down on the buckle end of the belt as you pull up on the shoulder belt.



The lap part of the belt should be worn low and snug on the hips, just touching the thighs. In a crash, this applies force to the strong pelvic bones. And you'd be less likely to slide under the lap belt. If you slid under it, the belt would apply force at your abdomen. This could cause serious or even fatal injuries. The shoulder belt should go over the shoulder and across the chest. These parts of the body are best able to take belt restraining forces.

The safety belt locks if there's a sudden stop or crash, or if you pull the belt very quickly out of the retractor.

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## Shoulder Belt Height Adjuster (Four Door Models)

Before you begin to drive, move the shoulder belt adjuster to the height that is right for you. Adjust the height so that the shoulder portion of the belt is centered on your shoulder. The belt should be away from your face and neck, but not falling off your shoulder.

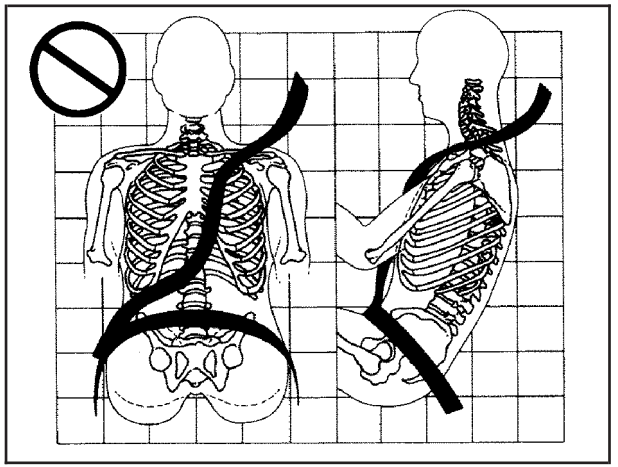


To move it down, squeeze the release button and move the height adjuster to the desired position. You can move the adjuster up just by pushing up on the shoulder belt guide. After you move the adjuster to where you want it, try to move it down without squeezing the release button to make sure it has locked into position.



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**Q:** **What's wrong with this?**



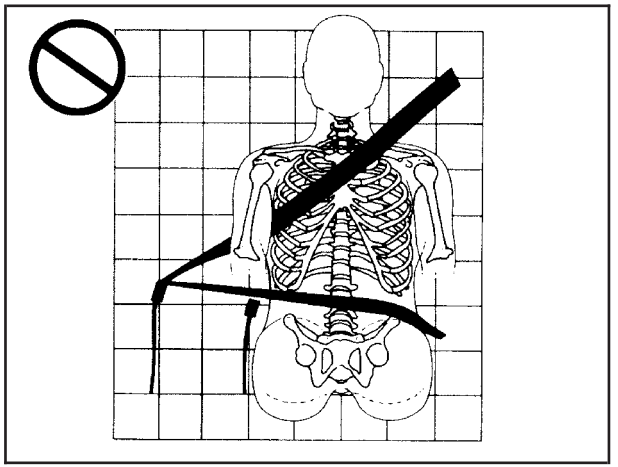
**A:** The shoulder belt is too loose. It won't give nearly as much protection this way.

**⚠ CAUTION:**

**You can be seriously hurt if your shoulder belt is too loose. In a crash, you would move forward too much, which could increase injury. The shoulder belt should fit against your body.**

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**Q:** **What's wrong with this?**



**A:** The belt is buckled in the wrong place.

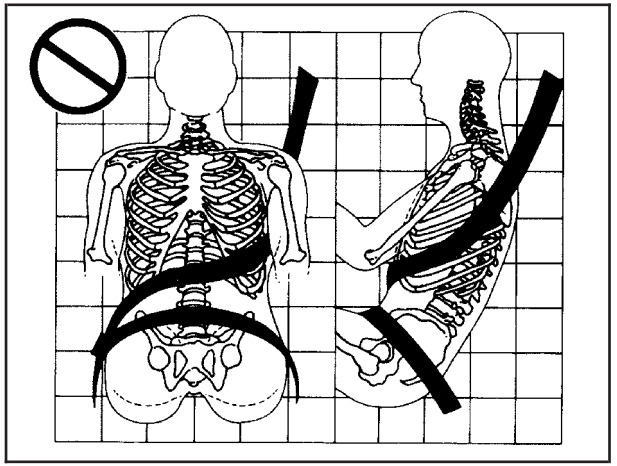
**⚠ CAUTION:**

**You can be seriously injured if your belt is buckled in the wrong place like this. In a crash, the belt would go up over your abdomen. The belt forces would be there, not at the pelvic bones. This could cause serious internal injuries. Always buckle your belt into the buckle nearest you.**



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**Q:** **What's wrong with this?**



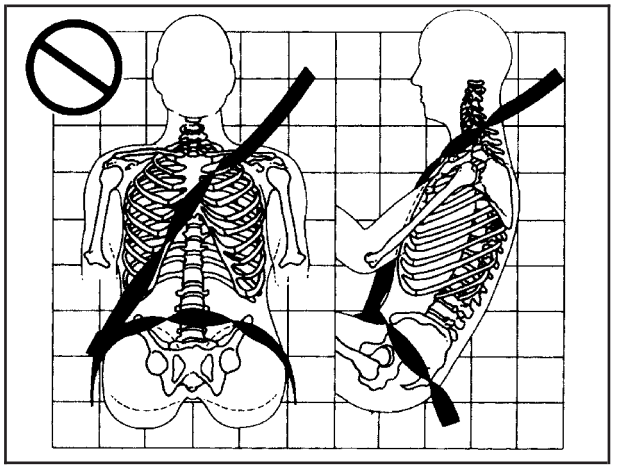
**A:** The shoulder belt is worn under the arm. It should be worn over the shoulder at all times.

**⚠ CAUTION:**

**You can be seriously injured if you wear the shoulder belt under your arm. In a crash, your body would move too far forward, which would increase the chance of head and neck injury. Also, the belt would apply too much force to the ribs, which aren't as strong as shoulder bones. You could also severely injure internal organs like your liver or spleen.**

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**Q:** **What's wrong with this?**



**A:** The belt is twisted across the body.

**⚠ CAUTION:**

**You can be seriously injured by a twisted belt. In a crash, you wouldn't have the full width of the belt to spread impact forces. If a belt is twisted, make it straight so it can work properly, or ask your dealer to fix it.**



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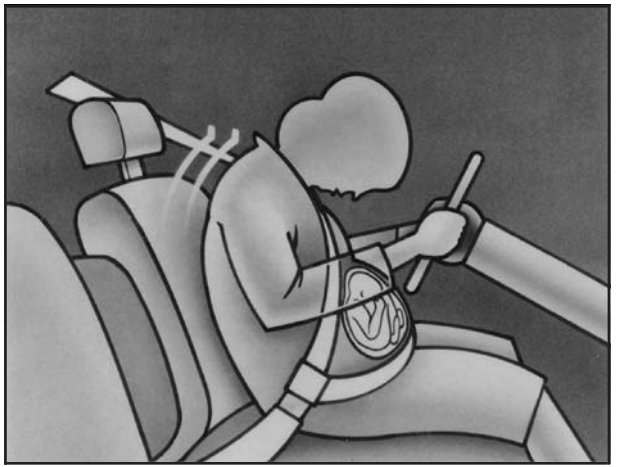
To unlatch the belt, just push the button on the buckle. The belt should go back out of the way.

Before you close the door, be sure the belt is out of the way. If you slam the door on it, you can damage both the belt and your vehicle.

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## Safety Belt Use During Pregnancy

Safety belts work for everyone, including pregnant women. Like all occupants, they are more likely to be seriously injured if they don't wear safety belts.



A pregnant woman should wear a lap-shoulder belt, and the lap portion should be worn as low as possible, below the rounding, throughout the pregnancy.

The best way to protect the fetus is to protect the mother. When a safety belt is worn properly, it's more likely that the fetus won't be hurt in a crash. For pregnant women, as for anyone, the key to making safety belts effective is wearing them properly.

## Right Front Passenger Position

To learn how to wear the right front passenger's safety belt properly, see *Driver Position on page 1-14*.

The right front passenger's safety belt works the same way as the driver's safety belt – except for one thing. If you ever pull the shoulder portion of the belt out all the way, you will engage the child restraint locking feature. If this happens, just let the belt go back all the way and start again.

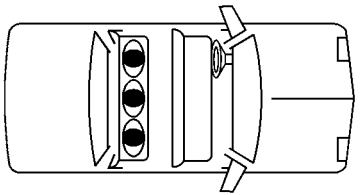


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## Rear Seat Passengers

It's very important for rear seat passengers to buckle up! Accident statistics show that unbelted people in the rear seat are hurt more often in crashes than those who are wearing safety belts.

Rear passengers who aren't safety belted can be thrown out of the vehicle in a crash. And they can strike others in the vehicle who are wearing safety belts.



## Lap-Shoulder Belt

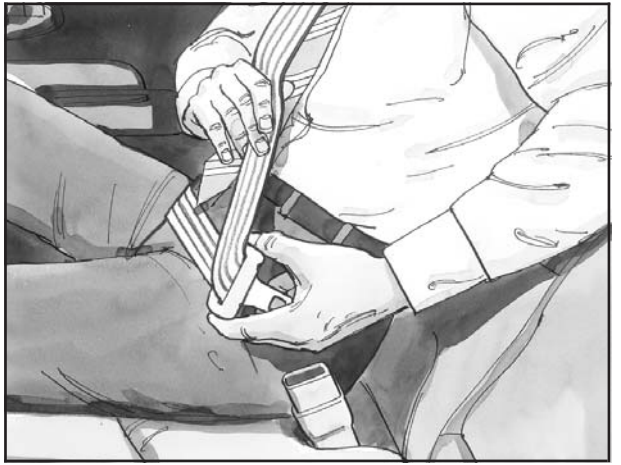
All rear seating positions have lap-shoulder belts. Here's how to wear one properly.



1. Pick up the latch plate and pull the belt across you. Don't let it get twisted.

   The shoulder belt may lock if you pull the belt across you very quickly. If this happens, let the belt go back slightly to unlock it. Then pull the belt across you more slowly.
2. Push the latch plate into the buckle until it clicks.

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If the belt stops before it reaches the buckle, tilt the latch plate and keep pulling until you can buckle it.

Pull up on the latch plate to make sure it is secure.

If the belt is not long enough, see *Safety Belt Extender on page 1-28*.

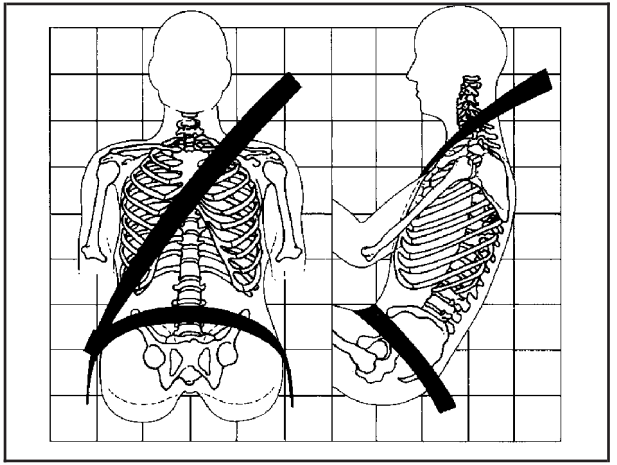
Make sure the release button on the buckle is positioned so you would be able to unbuckle the safety belt quickly if you ever had to.



3. To make the lap part tight, pull down on the buckle end of the belt as you pull up on the shoulder part.



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The lap part of the belt should be worn low and snug on the hips, just touching the thighs. In a crash this applies force to the strong pelvic bones. And you'd be less likely to slide under the lap belt. If you slid under it, the belt would apply force at your abdomen. This could cause serious or even fatal injuries. The shoulder belt should go over the shoulder and across the chest. These parts of the body are best able to take belt restraining forces.

The safety belt locks if there's a sudden stop or a crash, or if you pull the belt very quickly out of the retractor.

**⚠ CAUTION:**

**You can be seriously hurt if your shoulder belt is too loose. In a crash, you would move forward too much, which could increase injury. The shoulder belt should fit against your body.**



To unlatch the belt, just push the button on the buckle.

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DEALER E-PROCESS

## Rear Safety Belt Comfort Guides for Children and Small Adults

Rear shoulder belt comfort guides will provide added safety belt comfort for older children who have outgrown booster seats and for small adults. When installed on a shoulder belt, the comfort guide better positions the belt away from the neck and head.

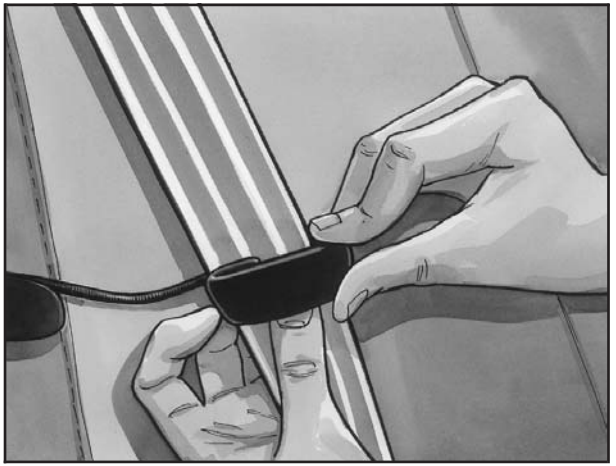
There is one guide for each outside passenger position in the rear seat. To provide added safety belt comfort for children who have outgrown child restraints and booster seats and for smaller adults, the comfort guides may be installed on the shoulder belts. Here's how to install a comfort guide and use the safety belt:



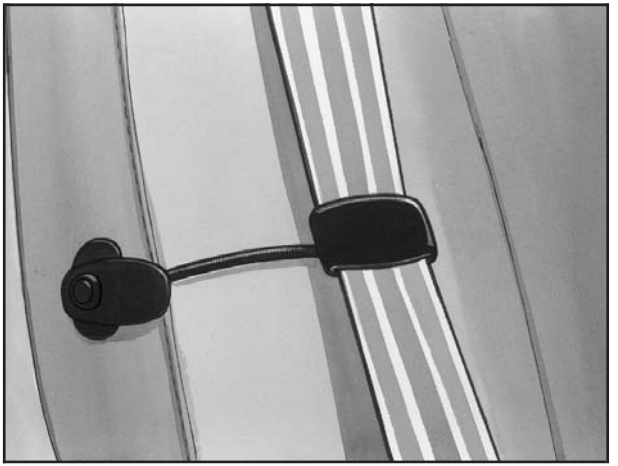
1. Pull the elastic cord out from between the edge of the seatback and the interior body to remove the guide from its storage clip.



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2. Slide the guide under and past the belt. The elastic cord must be under the belt. Then, place the guide over the belt, and insert the two edges of the belt into the slots of the guide.



3. Be sure that the belt is not twisted and it lies flat. The elastic cord must be under the belt and the guide on top.

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4. Buckle, position and release the safety belt as described in *Rear Seat Passengers on page 1-23*. Make sure that the shoulder belt crosses the shoulder.

To remove and store the comfort guides, squeeze the belt edges together so that you can take them out of the guides. Pull the guide upward to expose its storage clip, and then slide the guide onto the clip. Turn the guide and clip inward and in between the seatback and the interior body, leaving only the loop of elastic cord exposed.

## Safety Belt Extender

If the vehicle's safety belt will fasten around you, you should use it.

But if a safety belt isn't long enough to fasten, your dealer will order you an extender. It's free. When you go in to order it, take the heaviest coat you will wear, so the extender will be long enough for you. The extender will be just for you, and just for the seat in your vehicle that you choose. Don't let someone else use it, and use it only for the seat it is made to fit. To wear it, just attach it to the regular safety belt.



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# Child Restraints

## Older Children



Older children who have outgrown booster seats should wear the vehicle's safety belts.

**Q: What is the proper way to wear safety belts?**

**A:** If possible, an older child should wear a lap-shoulder belt and get the additional restraint a shoulder belt can provide. The shoulder belt should not cross the face or neck. The lap belt should fit snugly below the hips, just touching the top of the thighs. It should never be worn over the abdomen, which could cause severe or even fatal internal injuries in a crash.

Accident statistics show that children are safer if they are restrained in the rear seat.

In a crash, children who are not buckled up can strike other people who are buckled up, or can be thrown out of the vehicle. Older children need to use safety belts properly.

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**⚠ CAUTION:**

**Never do this.**

**Here two children are wearing the same belt. The belt can't properly spread the impact forces. In a crash, the two children can be crushed together and seriously injured. A belt must be used by only one person at a time.**

**Q: What if a child is wearing a lap-shoulder belt, but the child is so small that the shoulder belt is very close to the child's face or neck?**

**A:** If the child is sitting in a seat next to a window, move the child toward the center of the vehicle. If the child is sitting in the center rear seat passenger position, move the child toward the safety belt buckle. In either case, be sure that the shoulder belt still is on the child's shoulder, so that in a crash the child's upper body would have the restraint that belts provide. If the child is so small that the shoulder belt is still very close to the child's face or neck, you might want to place the child in a seat that has a lap belt, if your vehicle has one.



DEP DEALER E-PROCESS



**⚠ CAUTION:**

**Never do this.**

**Here a child is sitting in a seat that has a lap-shoulder belt, but the shoulder part is behind the child. If the child wears the belt in**

**CAUTION: (Continued)**

**CAUTION: (Continued)**

**this way, in a crash the child might slide under the belt. The belt's force would then be applied right on the child's abdomen. That could cause serious or fatal injuries.**

Wherever the child sits, the lap portion of the belt should be worn low and snug on the hips, just touching the child's thighs. This applies belt force to the child's pelvic bones in a crash.

## Infants and Young Children

Everyone in a vehicle needs protection! This includes infants and all other children. Neither the distance traveled nor the age and size of the traveler changes the need, for everyone, to use safety restraints. In fact, the law in every state in the United States and in every Canadian province says children up to some age must be restrained while in a vehicle.

Every time infants and young children ride in vehicles, they should have the protection provided by appropriate restraints. Young children should not use the vehicle's adult safety belts alone, unless there is no other choice. Instead, they need to use a child restraint.

DEP DEALER E-PROCESS



**⚠ CAUTION:**

**People should never hold a baby in their arms while riding in a vehicle. A baby doesn't weigh much -- until a crash. During a crash a baby will become so heavy it is not possible to hold**

**CAUTION: (Continued)**

**CAUTION: (Continued)**

**it. For example, in a crash at only 25 mph (40 km/h), a 12-lb. (5.5 kg) baby will suddenly become a 240-lb. (110 kg) force on a person's arms. A baby should be secured in an appropriate restraint.**





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## ⚠ CAUTION:

**Children who are up against, or very close to, any air bag when it inflates can be seriously injured or killed. Air bags plus lap-shoulder belts offer outstanding protection for adults and older children, but not for young children and infants. Neither the vehicle's safety belt system nor its air bag system is designed for them. Young children and infants need the protection that a child restraint system can provide.**

**Q: What are the different types of add-on child restraints?**

**A:** Add-on child restraints, which are purchased by the vehicle's owner, are available in four basic types. Selection of a particular restraint should take into consideration not only the child's weight, height and age but also whether or not the restraint will be compatible with the motor vehicle in which it will be used.

For most basic types of child restraints, there are many different models available. When purchasing a child restraint, be sure it is designed to be used in a motor vehicle. If it is, the restraint will have a label saying that it meets federal motor vehicle safety standards.

The restraint manufacturer's instructions that come with the restraint, state the weight and height limitations for a particular child restraint. In addition, there are many kinds of restraints available for children with special needs.

## ⚠ CAUTION:

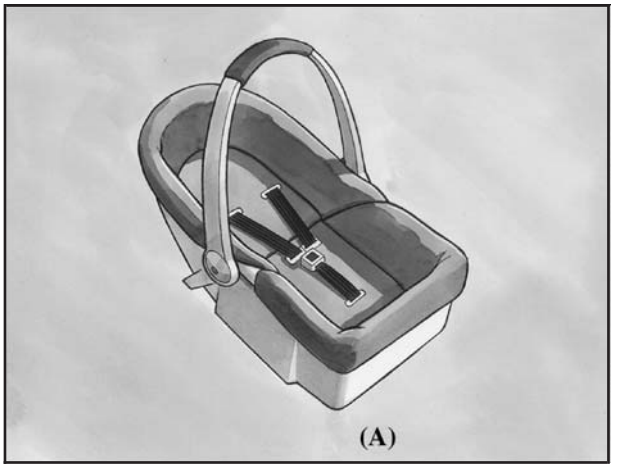
**Newborn infants need complete support, including support for the head and neck. This is necessary because a newborn infant's neck is weak and its head weighs so much compared with the rest of its body. In a crash, an infant in a rear-facing seat settles into the restraint, so the crash forces can be distributed across the strongest part of an infant's body, the back and shoulders. Infants always should be secured in appropriate infant restraints.**

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## ⚠ CAUTION:

**The body structure of a young child is quite unlike that of an adult or older child, for whom the safety belts are designed. A young child's hip bones are still so small that the vehicle's regular safety belt may not remain low on the hip bones, as it should. Instead, it may settle up around the child's abdomen. In a crash, the belt would apply force on a body area that's unprotected by any bony structure. This alone could cause serious or fatal injuries. Young children always should be secured in appropriate child restraints.**

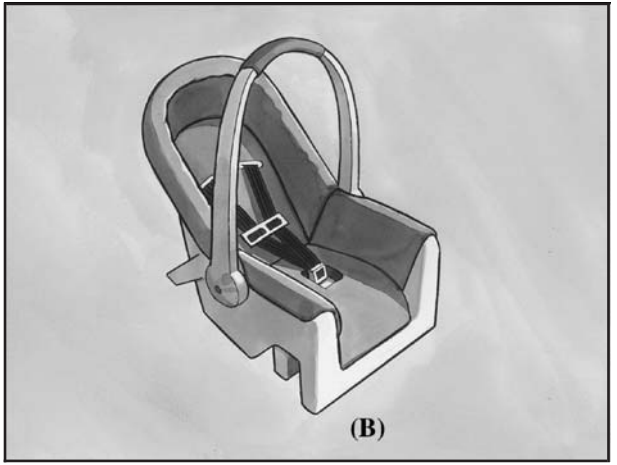
## Child Restraint Systems



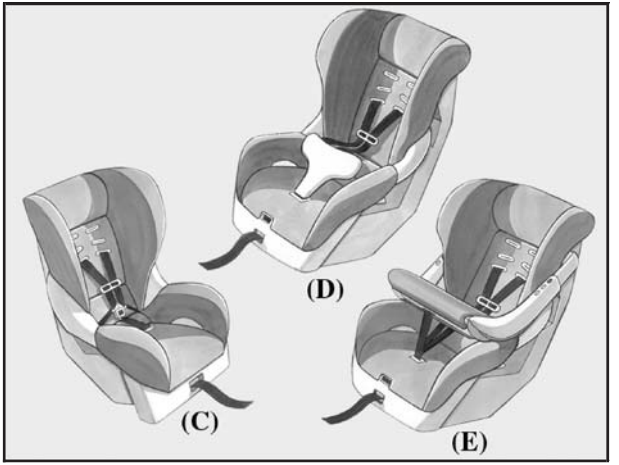

An infant car bed (A), a special bed made for use in a motor vehicle, is an infant restraint system designed to restrain or position a child on a continuous flat surface. Make sure that the infant's head rests toward the center of the vehicle.



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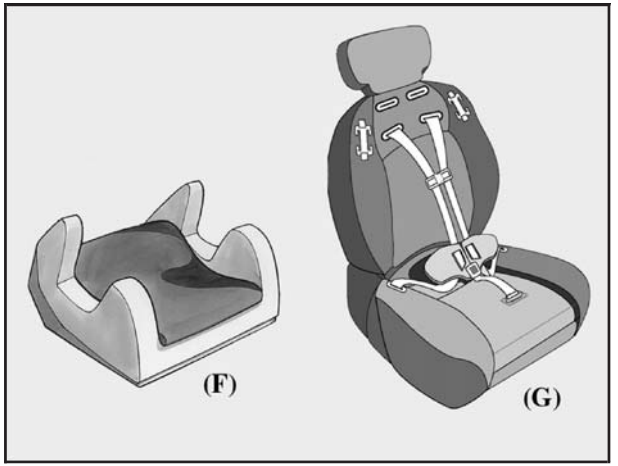



A rear-facing infant seat (B) provides restraint with the seating surface against the back of the infant. The harness system holds the infant in place and, in a crash, acts to keep the infant positioned in the restraint.




A forward-facing child seat (C-E) provides restraint for the child's body with the harness and also sometimes with surfaces such as T-shaped or shelf-like shields.

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A booster seat (F-G) is a child restraint designed to improve the fit of the vehicle's safety belt system. Some booster seats have a shoulder belt positioner, and some high-back booster seats have a five-point harness. A booster seat can also help a child to see out the window.

**Q: How do child restraints work?**

**A:** A child restraint system is any device designed for use in a motor vehicle to restrain, seat, or position children. A built-in child restraint system is a permanent part of the motor vehicle. An add-on child restraint system is a portable one, which is purchased by the vehicle's owner.

For many years, add-on child restraints have used the adult belt system in the vehicle. To help reduce the chance of injury, the child also has to be secured within the restraint. The vehicle's belt system secures the add-on child restraint in the vehicle, and the add-on child restraint's harness system holds the child in place within the restraint.

One system, the three-point harness, has straps that come down over each of the infant's shoulders and buckle together at the crotch. The five-point harness system has two shoulder straps, two hip straps and a crotch strap. A shield may take the place of hip straps. A T-shaped shield has shoulder straps that are attached to a flat pad which rests low against the child's body. A shelf- or armrest-type shield has straps that are attached to a wide, shelf-like shield that swings up or to the side.



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When choosing a child restraint, be sure the child restraint is designed to be used in a vehicle. If it is, it will have a label saying that it meets federal motor vehicle safety standards.

Then follow the instructions for the restraint. You may find these instructions on the restraint itself or in a booklet, or both. These restraints use the belt system or the LATCH system in your vehicle, but the child also has to be secured within the restraint to help reduce the chance of personal injury. When securing an add-on child restraint, refer to the instructions that come with the restraint which may be on the restraint itself or in a booklet, or both, and to this manual. The child restraint instructions are important, so if they are not available, obtain a replacement copy from the manufacturer.

## Where to Put the Restraint

Accident statistics show that children are safer if they are restrained in the rear rather than the front seat. We, therefore, recommend that child restraints be secured in a rear seat, including an infant riding in a rear-facing infant seat, a child riding in a forward-facing child seat and an older child riding in a booster seat. *Never* put a rear-facing child restraint in the front passenger seat. Here's why:

**⚠ CAUTION:**

**A child in a rear-facing child restraint can be seriously injured or killed if the right front passenger's air bag inflates. This is because the back of the rear-facing child restraint would be very close to the inflating air bag. Always secure a rear-facing child restraint in a rear seat.**

**If you secure a forward-facing child restraint in the right front seat, always move the front passenger seat as far back as it will go. It is better to secure the child restraint in a rear seat.**

Wherever you install it, be sure to secure the child restraint properly.

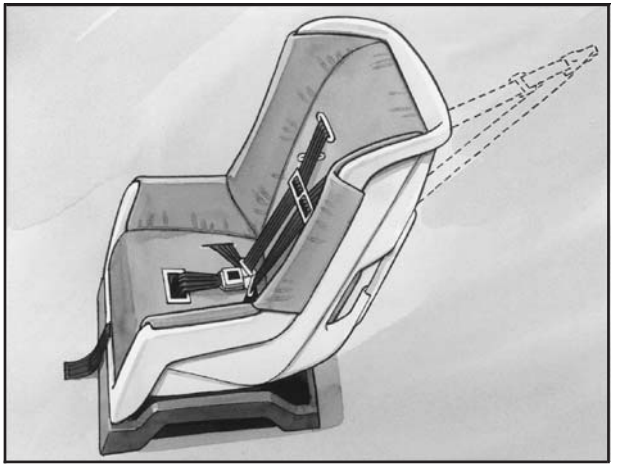
Keep in mind that an unsecured child restraint can move around in a collision or sudden stop and injure people in the vehicle. Be sure to properly secure any child restraint in your vehicle – even when no child is in it.

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## Top Strap

Some child restraints have a top strap, or “top tether.” It can help restrain the child restraint during a collision. For it to work, a top strap must be properly anchored to the vehicle. Some top strap-equipped child restraints are designed for use with or without the top strap being anchored. Others require the top strap always to be anchored. Be sure to read and follow the instructions for your child restraint. If yours requires that the top strap be anchored, don’t use the restraint unless it is anchored properly.

If the child restraint does not have a top strap, one can be obtained, in kit form, for many child restraints. Ask the child restraint manufacturer whether or not a kit is available.



In Canada, the law requires that forward-facing child restraints have a top strap, and that the strap be anchored. In the United States, some child restraints also have a top strap. If your child restraint has a top strap, it should be anchored.

Anchor the top strap to an anchor point specified in *Top Strap Anchor Location on page 1-39*. Be sure to use an anchor point located on the same side of the vehicle as the seating position where the child restraint will be placed.



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## ⚠ CAUTION:

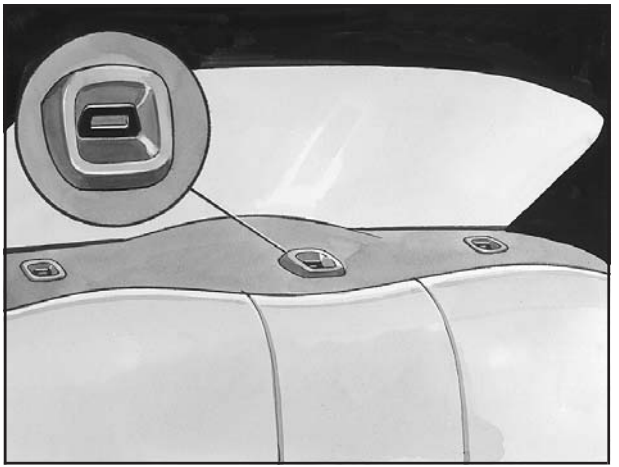
**Each top tether bracket is designed to anchor only one child restraint. Attaching more than one child restraint to a single bracket could cause the anchor to come loose or even break during a crash. A child or others could be injured if this happens. To help prevent injury to people and damage to your vehicle, attach only one child restraint per bracket.**

Once you have the top strap anchored, you'll be ready to secure the child restraint itself. Tighten the top strap when and as the child restraint manufacturer's instructions say.

## Top Strap Anchor Location

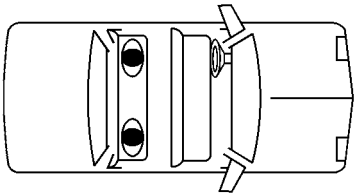
Top strap anchors are already installed in your vehicle for the rear seating positions. You'll find them behind the rear seat on the filler panel.

Do not use a child restraint with a top strap in the right front passenger's position because there is no place to anchor the top strap.



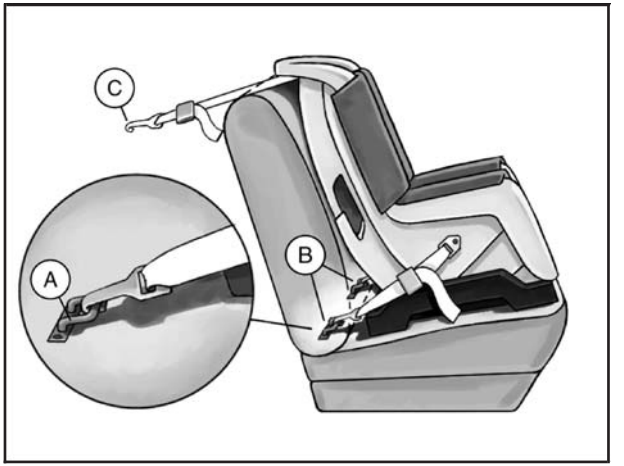
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## Lower Anchorages and Top Tethers for Children (LATCH System)



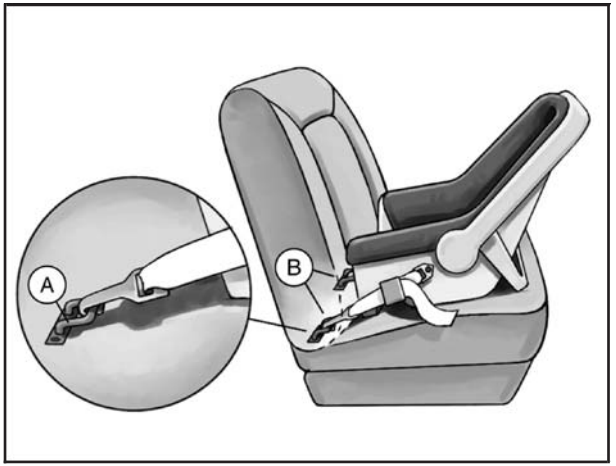
Your vehicle has the LATCH system. You will find anchors (A) for the rear outside seating positions.

This system, designed to make installation of child restraints easier, does not use the vehicle's safety belts. Instead, it uses vehicle anchors (A, B) and child restraint attachments to secure the restraints. Some restraints also use another vehicle anchor to secure a top tether strap (C).






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In order to use the LATCH system in your vehicle, you need a child restraint designed for that system.

To assist you in locating the lower anchors for this child restraint system, each seating position with the LATCH system has a label on the seatback at each lower anchor position.



The labels are located near the base of the two rear outside seating positions.

## ⚠ CAUTION:

**If a LATCH-type child restraint isn't attached to its anchorage points, the restraint won't be able to protect the child correctly. In a crash, the child could be seriously injured or killed. Make sure that a LATCH-type child restraint is properly installed using the anchorage points, or use the vehicle's safety belts to secure the restraint. See "Securing a Child Restraint Designed for the LATCH System" or "Securing a Child Restraint in a Rear Seat Position" in the Index for information on how to secure a child restraint in your vehicle.**

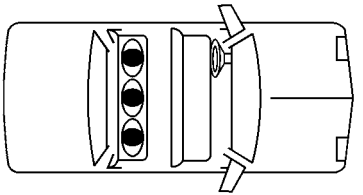
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## Securing a Child Restraint Designed for the LATCH System (Rear)

1. Find the LATCH anchorages for the seating position you want to use, where the bottom of the seatback meets the back of the seat cushion.
2. Put the child restraint on the seat.
3. Attach and tighten the LATCH attachments on the child restraint to the LATCH anchorages in the vehicle. The child restraint instructions will show you how.
4. If the child restraint is forward-facing, attach and tighten the top tether to the top tether anchorage. The child restraint instructions will show you how. Also see *Top Strap on page 1-38*.
5. Push and pull the child restraint in different directions to be sure it is secure.

To remove the child restraint, simply unhook the top tether from the top tether anchorage and then disconnect the LATCH attachments from the LATCH anchorages.

## Securing a Child Restraint in a Rear Seat Position



If your child restraint is equipped with the LATCH system, see *Lower Anchorages and Top Tethers for Children (LATCH System) on page 1-40*. See the *Top Strap on page 1-38* if the child restraint has one.

If your child restraint does not have the LATCH system, you will be using the lap-shoulder belt to secure the child restraint in this position. Be sure to follow the instructions that came with the child restraint. Secure the child in the child restraint when and as the instructions say.

1. Put the restraint on the seat.
2. Pick up the latch plate, and run the lap and shoulder portions of the vehicle's safety belt through or around the restraint. The child restraint instructions will show you how.



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Tilt the latch plate to adjust the belt if needed.



3. Buckle the belt. Make sure the release button is positioned so you would be able to unbuckle the safety belt quickly if you ever had to.

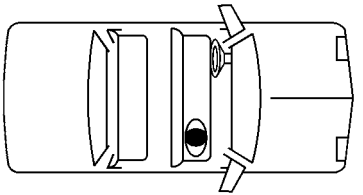
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4. To tighten the belt, pull up on the shoulder belt while you push down on the child restraint. If you're using a forward-facing child restraint, you may find it helpful to use your knee to push down on the child restraint as you tighten the belt.
5. Push and pull the child restraint in different directions to be sure it is secure.

To remove the child restraint, just unbuckle the vehicle's safety belt and let it go back all the way. The safety belt will move freely again and be ready to work for an adult or larger child passenger.

## Securing a Child Restraint in the Right Front Seat Position



If your child restraint is equipped with the LATCH system, see *Lower Anchorages and Top Tethers for Children (LATCH System) on page 1-40*. See *Top Strap on page 1-38* if the child restraint has one.



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Your vehicle has a right front passenger air bag. *Never* put a rear-facing child restraint in this seat. Here is why:

**⚠ CAUTION:**

**A child in a rear-facing child restraint can be seriously injured or killed if the right front passenger's air bag inflates. This is because the back of the rear-facing child restraint would be very close to the inflating air bag. Always secure a rear-facing child restraint in a rear seat.**

A rear seat is a safer place to secure a forward-facing child restraint. If you need to secure a forward-facing child restraint in the right front seat, you will be using the lap-shoulder belt to secure the restraint in this position. Be sure to follow the instructions that came with the child restraint. Secure the child in the child restraint when and as the instructions say.

1. Because your vehicle has a right front passenger air bag, always move the seat as far back as it will go before securing a forward-facing child restraint. See *Manual Seats on page 1-2*.
2. Put the restraint on the seat.
3. Pick up the latch plate, and run the lap and shoulder portions of the vehicle's safety belt through or around the restraint. The child restraint instructions will show you how.



4. Buckle the belt. Make sure the release button is positioned so you would be able to unbuckle the safety belt quickly if you ever had to.

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5. Pull the rest of the shoulder belt all the way out of the retractor to set the lock.



6. To tighten the belt, feed the shoulder belt back into the retractor while you push down on the child restraint. You may find it helpful to use your knee to push down on the child restraint as you tighten the belt.
7. Push and pull the child restraint in different directions to be sure it is secure.

To remove the child restraint, just unbuckle the vehicle's safety belt and let it go back all the way. The safety belt will move freely again and be ready to work for an adult or larger child passenger.

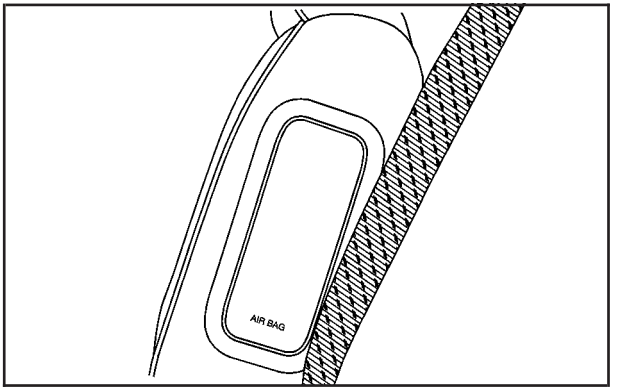


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# Air Bag Systems

This part explains the frontal and side impact air bag systems.

Your vehicle has a frontal air bag for the driver and a frontal air bag for the right front passenger. Your vehicle may also have a side impact air bag for the driver, and another side impact air bag for the right front passenger.




If your vehicle has a side impact air bag for the driver and/or right front passenger, the words AIR BAG will appear on the air bag covering on the side of the seatback closest to the door.

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Frontal air bags are designed to help minimize the risk of injury from the force of an inflating frontal air bag while providing enough force to perform properly. Air bags must inflate very quickly to do their job and comply with federal regulations. Therefore, you need to know some important things about the air bag systems.

**⚠ CAUTION:**

**You can be severely injured or killed in a crash if you aren't wearing your safety belt – even if you have air bags. Wearing your safety belt during a crash helps reduce your chance of hitting things inside the vehicle or being ejected from it. Air bags are designed to work with safety belts but don't replace them.**

**Frontal air bags for the driver and right front passenger are designed to deploy only in moderate to severe frontal and near frontal crashes. They aren't designed to inflate at all in**

**CAUTION: (Continued)**

**CAUTION: (Continued)**

**rollover, rear or low-speed frontal crashes, or in many side crashes. And, for some unrestrained occupants, frontal air bags may provide less protection in frontal crashes than more forceful air bags have provided in the past.**

**The side impact air bags for the driver and right front passenger are designed to inflate only in moderate to severe crashes where something hits the side of your vehicle. They aren't designed to inflate in frontal, in rollover or in rear crashes.**

**Everyone in your vehicle should wear a safety belt properly – whether or not there's an air bag for that person.**



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**⚠ CAUTION:**

**Both frontal and side impact air bags inflate with great force, faster than the blink of an eye. If you're too close to an inflating air bag, as you would be if you were leaning forward, it could seriously injure you. Safety belts help keep you in position for air bag inflation before and during a crash. Always wear your safety belt, even with frontal air bags. The driver should sit as far back as possible while still maintaining control of the vehicle. Front occupants should not lean on or sleep against the door.**

**⚠ CAUTION:**

**Anyone who is up against, or very close to, any air bag when it inflates can be seriously injured or killed. Air bags plus lap-shoulderbelts offer the best protection for adults, but not for young children and infants. Neither the vehicle's safety belt system nor its air bag system is designed for them. Young children and infants need the protection that a child restraint system can provide. Always secure children properly in your vehicle. To read how, see the part of this manual called "Older Children" or "Infants and Young Children."**

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There is a air bag readiness light on the instrument panel, which shows the air bag symbol.

The system checks the air bag electrical system for malfunctions. The light tells you if there is an electrical problem. See *Air Bag Readiness Light on page 3-23* for more information.

## Where Are the Air Bags?



The driver's air bag is in the middle of the steering wheel.



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The right front passenger's air bag is in the instrument panel on the passenger's side.



If your vehicle has one, the driver's side impact air bag is in the side of the driver's seatback closest to the door.

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If your vehicle has one, the passenger's side impact air bag is in the side of the passenger's seatback closest to the door.

**⚠ CAUTION:**

**If something is between an occupant and an air bag, the bag might not inflate properly or it might force the object into that person causing severe injury or even death. The path of an inflating air bag must be kept clear. Don't put anything between an occupant and an air bag, and don't attach or put anything on the steering wheel hub or on or near any other air bag covering. Don't let seat covers block the inflation path of a side impact air bag.**

## When Should an Air Bag Inflate?

The driver's and right front passenger's frontal air bags are designed to inflate in moderate to severe frontal or near-frontal crashes. But they are designed to inflate only if the impact speed is above the system's designed "threshold level."

If the front of your vehicle goes straight into a wall that doesn't move or deform, the threshold level is about 9 to 14 mph (14 to 23 km/h). The threshold level can vary, however, with specific vehicle design, so that it can be somewhat above or below this range.



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If your vehicle strikes something that will move or deform, such as a parked car, the threshold level will be higher. The driver's and right front passenger's frontal air bags are not designed to inflate in rollovers, rear impacts, or in many side impacts because inflation would not help the occupant.

Your vehicle may or may not have a side impact air bag. See *Air Bag Systems on page 1-47*. Side impact air bags are designed to inflate in moderate to severe side crashes. A side impact air bag will inflate if the crash severity is above the system's designed "threshold level." The threshold level can vary with specific vehicle design. Side impact air bags are not designed to inflate in frontal or near-frontal impacts, rollovers or rear impacts, because inflation would not help the occupant. A side impact air bag will only deploy on the side of the vehicle that is struck.

In any particular crash, no one can say whether an air bag should have inflated simply because of the damage to a vehicle or because of what the repair costs were. For frontal air bags, inflation is determined by the angle of the impact and how quickly the vehicle slows down in frontal and near-frontal impacts. For side impact air bags, inflation is determined by the location and severity of the impact.

## What Makes an Air Bag Inflate?

In an impact of sufficient severity, the air bag sensing system detects that the vehicle is in a crash. For both frontal and side impact air bags, the sensing system triggers a release of gas from the inflator, which inflates the air bag. The inflator, the air bag and related hardware are all part of the air bag modules. Frontal air bag modules are located inside the steering wheel and instrument panel. For vehicles with side impact air bags, the air bag modules are located in the seatback closest to the driver's and/or right front passenger's door.

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## How Does an Air Bag Restrain?

In moderate to severe frontal or near frontal collisions, even belted occupants can contact the steering wheel or the instrument panel. In moderate to severe side collisions, even belted occupants can contact the inside of the vehicle. The air bag supplements the protection provided by safety belts. Air bags distribute the force of the impact more evenly over the occupant's upper body, stopping the occupant more gradually. But the frontal air bags would not help you in many types of collisions, including rollovers, rear impacts, and many side impacts, primarily because an occupant's motion is not toward the air bag. Side impact air bags would not help you in many types of collisions, including frontal or near frontal collisions, rollovers, and rear impacts, primarily because an occupant's motion is not toward those air bags. Air bags should never be regarded as anything more than a supplement to safety belts, and then only in moderate to severe frontal or near-frontal collisions for the driver's and right front passenger's frontal air bags, and only in moderate to severe side collisions for vehicles with a driver's and right front passenger's side impact air bag.

## What Will You See After an Air Bag Inflates?

After the air bag inflates, it quickly deflates, so quickly that some people may not even realize the air bag inflated. Some components of the air bag module will be hot for a short time. These components include the steering wheel hub for the driver's frontal air bag and the instrument panel for the right front passenger's frontal air bag. For vehicles with side impact air bags, the side of the seatback closest to the driver's and/or right front passenger's door will be hot. The parts of the bag that come into contact with you may be warm, but not too hot to touch. There will be some smoke and dust coming from the vents in the deflated air bags. Air bag inflation doesn't prevent the driver from seeing or being able to steer the vehicle, nor does it stop people from leaving the vehicle.



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## ⚠ CAUTION:

**When an air bag inflates, there is dust in the air. This dust could cause breathing problems for people with a history of asthma or other breathing trouble. To avoid this, everyone in the vehicle should get out as soon as it is safe to do so. If you have breathing problems but can't get out of the vehicle after an air bag inflates, then get fresh air by opening a window or a door. If you experience breathing problems following an air bag deployment, you should seek medical attention.**

In many crashes severe enough to inflate an air bag, windshields are broken by vehicle deformation. Additional windshield breakage may also occur from the right front passenger air bag.

- Air bags are designed to inflate only once. After an air bag inflates, you'll need some new parts for your air bag system. If you don't get them, the air bag system won't be there to help protect you in another crash. A new system will include air bag modules and possibly other parts. The service manual for your vehicle covers the need to replace other parts.
- Your vehicle is equipped with a crash sensing and diagnostic module, which records information about the air bag system. The module records information about the readiness of the system, when the system commands air bag inflation and driver's safety belt usage at deployment.
- Let only qualified technicians work on your air bag system. Improper service can mean that your air bag system won't work properly. See your dealer for service.

***Notice:*** **If you damage the covering for the driver's or the right front passenger's air bag, or the air bag covering on the driver's and right front passenger's seatback, the bag may not work properly. You may have to replace the air bag module in the steering wheel, both the air bag module and the instrument panel for the right front passenger's air bag, or both the air bag module and seatback for the driver's and right front passenger's side impact air bag. Do not open or break the air bag coverings.**

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## Servicing Your Air Bag-Equipped Vehicle

Air bags affect how your vehicle should be serviced. There are air bag system parts in several places around your vehicle. You don't want the system to inflate while someone is working on your vehicle. Your dealer and the service manual have information about servicing your vehicle and the air bag system. To purchase a service manual, see *Service Publications Ordering Information on page 7-11*.

**⚠ CAUTION:**

**For up to 10 minutes after the ignition key is turned off and the battery is disconnected, an air bag can still inflate during improper service. You can be injured if you are close to an air bag when it inflates. Avoid yellow connectors. They are probably part of the air bag system. Be sure to follow proper service procedures, and make sure the person performing work for you is qualified to do so.**

Air bag systems do not need regular maintenance.

# Restraint System Check

## Checking Your Restraint Systems

Now and then, make sure the safety belt reminder light and all your belts, buckles, latch plates, retractors and anchorages are working properly. Look for any other loose or damaged safety belt system parts. If you see anything that might keep a safety belt system from doing its job, have it repaired.

Torn or frayed safety belts may not protect you in a crash. They can rip apart under impact forces. If a belt is torn or frayed, get a new one right away.

Also look for any opened or broken air bag covers, and have them repaired or replaced. (The air bag system does not need regular maintenance.)



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## Replacing Restraint System Parts After a Crash

**⚠ CAUTION:**

**A crash can damage the restraint systems in your vehicle. A damaged restraint system may not properly protect the person using it, resulting in serious injury or even death in a crash. To help make sure your restraint systems are working properly after a crash, have them inspected and any necessary replacements made as soon as possible.**

If you've had a crash, do you need new or LATCH system parts?

After a very minor collision, nothing may be necessary. But if the belts were stretched, as they would be if worn during a more severe crash, then you need new parts.

If the LATCH system was being used during a more severe crash, you may need new LATCH system parts.

If belts are cut or damaged, replace them. Collision damage also may mean you will need to have LATCH system, safety belt or seat parts repaired or replaced. New parts and repairs may be necessary even if the belt or LATCH system wasn't being used at the time of the collision.

If an air bag inflates, you'll need to replace air bag system parts. See *Air Bag Systems on page 1-47*.

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## NOTES



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# Section 2 Features and Controls


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# Keys

**⚠ CAUTION:**

**Leaving children in a vehicle with the ignition key is dangerous for many reasons. They could operate the power windows or other controls or even make the vehicle move. The children or others could be badly injured or even killed. Do not leave the keys in a vehicle with children.**





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One key is used for the ignition, the doors and all other locks.

When a new vehicle is delivered, the dealer removes the key tag from the key and gives it to the first owner. Each tag has a code on it that tells your dealer or a qualified locksmith how to make extra keys. Keep the tag in a safe place. If you lose your key, you'll be able to have a new one made easily using the tag.

If you need a new key, contact your dealer who can obtain the correct key code. See *Roadside Assistance Program on page 7-6* for more information.

***Notice:*** **If you ever lock your keys in your vehicle, you may have to damage the vehicle to get in. Be sure you have spare keys.**

If your vehicle is equipped with the OnStar® system with an active subscription and you lock your keys inside the vehicle, OnStar® may be able to send a command to unlock your vehicle. See *OnStar® System on page 2-32* for more information.

## Remote Keyless Entry System

If equipped, the remote keyless entry system operates on a radio frequency subject to Federal Communications Commission (FCC) Rules and with Industry Canada.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause interference, and
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

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This device complies with RSS-210 of Industry Canada. Operation is subject to the following two conditions:

1. This device may not cause interference, and
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

Changes or modifications to this system by other than an authorized service facility could void authorization to use this equipment.

At times you may notice a decrease in range. This is normal for any remote keyless entry system. If the transmitter does not work or if you have to stand closer to your vehicle for the transmitter to work, try this:

- Check the distance. You may be too far from your vehicle. You may need to stand closer during rainy or snowy weather.
- Check the location. Other vehicles or objects may be blocking the signal. Take a few steps to the left or right, hold the transmitter higher, and try again.
- Check to determine if battery replacement or resynchronization is necessary. See “Battery Replacement” and “Resynchronization” under “Remote Keyless Entry System Operation” following this section.
- If you are still having trouble, see your dealer or a qualified technician for service.

## Remote Keyless Entry System Operation

If your vehicle has this feature, you can lock and unlock your doors or unlock your trunk from about 3 feet (1 m) up to 30 feet (9 m) away using the remote keyless entry transmitter supplied with your vehicle.

In addition, the system illuminates the interior lamps for a set period of time. Also, a content theft security system can be activated to monitor and set a horn alarm if the vehicle’s door or trunk is opened without first unlocking the door or trunk with the remote keyless entry transmitter.

The remote keyless entry system consists of a receiver, which is located in the vehicle, and two hand held transmitters.



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The following functions are available with the remote keyless entry system:

**LOCK:** Press this button to automatically lock all doors. In addition, if all doors and the trunk are closed, the headlamps will flash once, the interior lamps will turn off, and the vehicle content theft security system will arm. See *Content Theft-Deterrent on page 2-14*.

**UNLOCK:** Press this button to unlock the driver's door. In addition, the headlamps will flash twice, the interior lamps will turn on for about 20 seconds or until the ignition is turned on, and the content theft security system will disarm. See *Content Theft-Deterrent on page 2-14*. If you press this button again within five seconds, all remaining doors will unlock.

**(Trunk Release):** Press this button to open the trunk. You can open the trunk with the transmitter when the vehicle speed is less than 2 mph (3 km/h). The headlamps will flash twice.

**(Panic):** Press this button to sound the horn and make the headlamps and interior lamps flash alternately. They can be turned off by pressing this button again or by turning the ignition to ON. The alarm will sound for two minutes unless cancelled by the driver.

Your dealer can change the settings to disable the headlamp flash and horn chirp features. Your dealer can also change the settings to allow the horn to chirp twice on the first press of the UNLOCK button. See your dealer for more information.

## Radio Personalization

Your vehicle can store different radio preset stations depending on which keyless entry transmitter you use to unlock the doors. The radio will recall all the stored settings associated with that transmitter. Any radio setting changes will be assigned to the transmitter last used to unlock the doors.

This feature can be disabled by your dealer if you desire. Contact your dealer for further information.

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## Matching Transmitter(s) to Your Vehicle

Each remote keyless entry transmitter is coded to prevent another transmitter from unlocking your vehicle. If a transmitter is lost or stolen, a replacement can be purchased through your dealer. Remember to bring any remaining transmitters with you when you go to your dealer. When the dealer matches the replacement transmitter to your vehicle, any remaining transmitters must also be matched. Once your dealer has coded the new transmitter, the lost transmitter will not unlock your vehicle. Each vehicle can have a maximum of four transmitters matched to it.

## Battery Replacement

Under normal use, the battery in your remote keyless entry transmitter should last about two years.

You can tell the battery is weak if the transmitter won't work at the normal range in any location. If you have to get close to your vehicle before the transmitter works, it's probably time to change the battery.

***Notice:*** **When replacing the battery, use care not to touch any of the circuitry. Static from your body transferred to these surfaces may damage the transmitter.**



To replace the battery in the transmitter:

1. Use a coin or similar object to separate the bottom half from the top half of the transmitter.
2. Remove the battery and replace it with the new one. Make sure the positive side of the battery faces down. For battery replacement, use a three-volt battery, type CR2032, or equivalent.
3. Read the instructions inside the case.
4. Put the two halves back together. Make sure the cover is on tightly, so water won't get in.
5. Check the operation of the transmitter with your vehicle. If the transmitter does not work, try resynchronizing the transmitter with the receiver.



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## Resynchronization

Your remote keyless entry system is equipped with a security system that prevents anyone from recording and playing back your signal. The transmitter does not send the same signal twice to the receiver. The receiver will not respond to a signal that has been sent to it more than once.

Normally, the transmitter and receiver resynchronize automatically. However, under certain circumstances, manual resynchronization may be required.

To resynchronize your transmitter and receiver, follow these directions:

1. Stand close to your vehicle.
2. Press and hold the LOCK and UNLOCK buttons on the transmitter at the same time.
3. Hold the buttons for at least 10 seconds. During this time, the doors should lock and unlock once. This confirms the resynchronization. If the doors do not lock and unlock, see your dealer for service.

# Doors and Locks

## Door Locks

**⚠ CAUTION:**

**Unlocked doors can be dangerous.**

- **Passengers — especially children — can easily open the doors and fall out of a moving vehicle. When a door is locked, the handle will not open it. You increase the chance of being thrown out of the vehicle in a crash if the doors are not locked. So, wear safety belts properly and lock the doors whenever you drive.**
- **Young children who get into unlocked vehicles may be unable to get out. A child can be overcome by extreme heat and can suffer permanent injuries or even death from heat stroke. Always lock your vehicle whenever you leave it.**
- **Outsiders can easily enter through an unlocked door when you slow down or stop your vehicle. Locking your doors can help prevent this from happening.**

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There are several ways to lock and unlock your vehicle.

Use your key to lock and unlock your vehicle from the outside. If your vehicle is equipped with a remote keyless entry system, you can also use it to lock and unlock your vehicle. See *Remote Keyless Entry System on page 2-3*.



To lock the door from the inside, push the locking lever forward.

To unlock the door, pull the locking lever rearward.

## Power Door Locks



If your vehicle has this feature, you can lock or unlock all the doors on your vehicle from the driver's or front passenger's door lock switch.

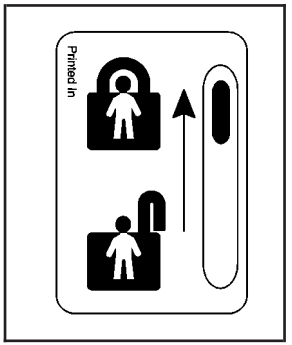
Press the lower portion of the switch to lock the doors. Press the upper portion of the switch to unlock the doors.

The locking lever on each rear door works only that door's lock. It will not lock or unlock all of the doors — that is a safety feature.



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## Rear Door Security Locks




If your vehicle is a four-door model, it is equipped with rear door security locks that help prevent passengers from opening the rear doors on your vehicle from the inside.

## Using the Rear Door Security Lock

1. Use a key to move the lock all the way up.
2. Close the door.
3. Do the same thing to the other rear door lock.

The rear doors on your vehicle cannot be opened from the inside when this feature is in use.

## Opening a Rear Door When the Security Lock is On

1. Unlock the door from the inside.
2. Then open the door from the outside.

If you do not cancel the security lock feature, adults or older children who ride in the rear will not be able to open the rear door from the inside. You should let adults and older children know how to cancel the locks.

## Canceling the Rear Door Security Lock

1. Unlock the door from the inside and open the door from the outside.
2. Use a key to move the lock all the way down.
3. Do the same for the other rear door.

The rear door lock will now work normally.

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## Lockout Protection

If your vehicle is equipped with remote keyless entry, you have lockout protection. This feature stops the power door locks from locking when the key is in the ignition and the door is open.

If the power door lock switch is pressed when a door is open and the key is in the ignition, all the doors will lock and the driver's door will unlock.

## Leaving Your Vehicle

If you are leaving the vehicle, open your door and set the locks from the inside. Then get out and close the door.

## Trunk

To unlock the trunk from the outside, insert the key and turn the trunk lock cylinder or use the remote keyless entry transmitter if your vehicle has one.

When closing the trunk, close from the center to ensure it fully latches. Although you may use one hand to unlock the trunk, it is recommended that two hands on the upper surface be used to close the trunk.

**⚠ CAUTION:**

**It can be dangerous to drive with the trunk lid open because carbon monoxide (CO) gas can come into your vehicle. You can not see or smell CO. It can cause unconsciousness and even death. If you must drive with the trunk lid open or if electrical wiring or other cable connections must pass through the seal between the body and the trunk lid:**

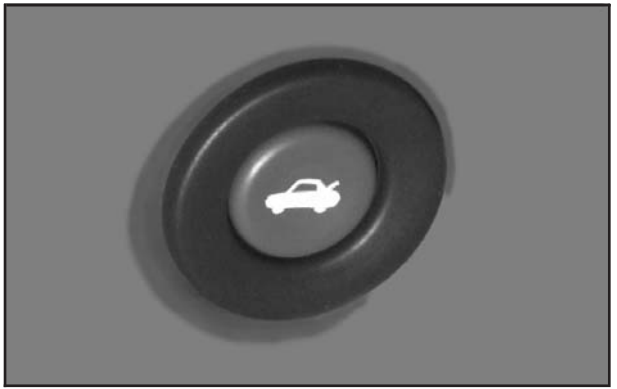
- **Make sure all other windows are shut.**
- **Turn the fan on your heating or cooling system to its highest speed and select the control setting that will force outside air into your vehicle. See Climate Control System in the Index.**
- **If you have air outlets on or under the instrument panel, open them all the way.**

**See *Engine Exhaust on page 2-28*.**



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## Remote Trunk Release

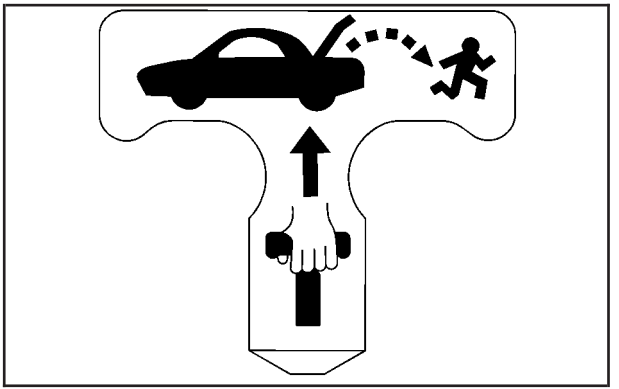


Press the remote trunk release button, located on the lower left side of the instrument panel, to release the trunk lid.

If your vehicle is equipped with the remote keyless entry system, the daytime running lamps will flash twice.

The remote trunk release will only work when either the ignition is in OFF or ACCESSORY, the parking brake is engaged, or the vehicle speed is less than 2 mph (3 km/h).

## Emergency Trunk Release Handle



***Notice:*** **Using the emergency trunk release handle as a tie-down or anchor point when securing items in the trunk may damage it. Use the emergency trunk release handle only to help you open the trunk lid.**

There is a glow-in-the-dark emergency trunk release handle located on the inside of the trunk lid of your vehicle. This handle will glow following exposure to light. Pull the release handle up to open the trunk from the inside.

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### Trap-Resistant Trunk Kit

To help prevent a child from becoming trapped in your trunk, you can order a trap-resistant trunk kit from your dealer. This kit includes the following:

- A modified trunk latch
- A lighted release handle
- Seatback tethers (for vehicles with folding rear seatbacks)

See your dealer for additional information.

## Windows

**⚠ CAUTION:**

**Leaving children in a vehicle with the windows closed is dangerous. A child can be overcome by the extreme heat and can suffer permanent injuries or even death from heat stroke. Never leave a child alone in a vehicle, especially with the windows closed in warm or hot weather.**



### Manual Windows

On a vehicle with manual windows, use the window crank to open and close each window.



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## Power Windows



If your vehicle has this feature, the switches on the center console control each of the power windows when the ignition is on. In addition, on four-door models, each rear passenger door has a control switch for that window.

To lower a window, press and hold the rear of the switch. To raise the window, press and hold the front of the switch.

## Express-Down Window

The driver's window switch has an express-down feature. The driver's window can be opened to the desired position by pressing the rear of the switch to the first detent. To use the express-down feature, press the rear of the switch all the way down. The window will continue going down until fully opened.

To stop the window while it is lowering, briefly press the front of the switch, then release it.

## Window Lock-Out

Four-door models also have a lock-out switch. Press the lock-out switch to disable the rear passenger's power window switches. This will prevent rear passengers from opening and closing the windows. The driver can still control all windows with the switch in the lock position.

Press the lock-out switch again to enable the passenger's window switches.

## Sun Visors

To block out glare, you can swing down the visors. You can also swing them to the side.

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# Theft-Deterrent Systems

Vehicle theft is big business, especially in some cities. Although your vehicle has a number of theft-deterrent features, we know that nothing we put on it can make it impossible to steal.

## Content Theft-Deterrent

### Arming the System

With the ignition off, press the LOCK button on the remote keyless entry transmitter to arm the system immediately after all doors and the trunk are closed. If the LOCK button is pressed again within five seconds, the horn will chirp to confirm that the system has been armed.

Once the system is armed, the THEFT SYSTEM light on your instrument panel will flash and remain flashing. This confirms the system is armed and monitoring the doors and trunk. If the light is on solid, the system is not properly activated due to either a door or the trunk being ajar.

If you don't want to arm the system, lock the car with the lock levers on the doors or with the power door lock switch.

### Disarming the System

If the system is armed, press the UNLOCK button on the transmitter to disarm the system. The THEFT SYSTEM light will stop flashing.

If the system is armed, turning the key to START will also disarm the system.

If the system is armed and the trunk is opened using the trunk release button on the transmitter, the system will temporarily disarm itself and re-arm when the trunk has been closed. This allows the customer to exit the vehicle, lock the doors using the transmitter, and open the trunk using the transmitter without having to disarm and subsequently re-arm the system.

### How the System Alarm is Activated

If the system is armed, opening any door or trunk, or using a wrong key to start the vehicle will cause a pre-alarm chirp for 10 seconds and then a full alarm of horn and headlights for two minutes.

If an alarm event has finished and all doors and trunk are closed, the content theft security system will re-arm itself.



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## How to Turn Off the System Alarm

If the system alarm is active, it can be deactivated by:

- Pressing the LOCK or panic button on the transmitter to turn off the alarm. The system will re-arm if all doors and the trunk are later closed.
- Pressing the UNLOCK or trunk button on the transmitter to turn off the alarm and disarm the system.
- Putting the key in the ignition and turning it to START to turn off the alarm and disarm the system.

## How to Detect a Tamper Condition

If you hear three horn chirps when you press the UNLOCK, LOCK or trunk buttons on your transmitter, the content theft security system alarm was triggered while you were away.

Your dealer can change the settings to disable the headlamp flash and horn chirp features. Your dealer can also change the settings to allow the horn to chirp twice on the first press of the UNLOCK button. See your dealer for more information.

# Passlock®

Your vehicle is equipped with the Passlock® theft-deterrent system.

Passlock® is a passive theft-deterrent system. Passlock® enables fuel if the ignition lock cylinder is turned with a valid key. If a correct key is not used or the ignition lock cylinder is tampered with, fuel is disabled.

During normal operation, the THEFT SYSTEM light will go off approximately five seconds after the key is turned to the RUN ignition position following an engine start.

If the engine stalls and the THEFT SYSTEM light flashes, wait until the light stops flashing before trying to restart the engine. Remember to release the key from START as soon as the engine starts.

If the engine is running and the THEFT SYSTEM light comes on, you will be able to restart the engine if you turn the engine off. However, your Passlock® system is not working properly and must be serviced by your dealer. Your vehicle is not protected by Passlock® at this time. See your dealer for service. Or see *Roadside Assistance Program on page 7-6* for more information.

You may also want to check the fuses. See *Fuses and Circuit Breakers on page 5-81*.

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# Starting and Operating Your Vehicle

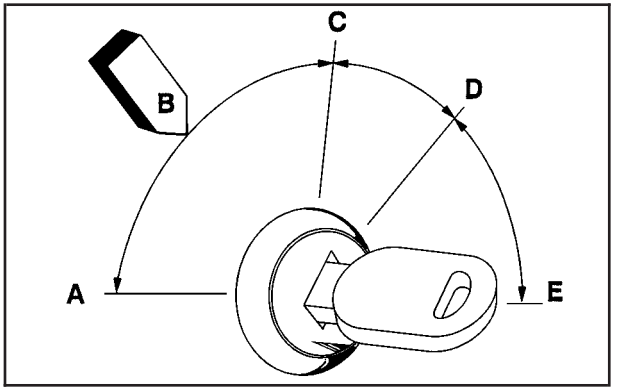
## New Vehicle Break-In

***Notice:*** **Your vehicle does not need an elaborate "break-in." But it will perform better in the long run if you follow these guidelines:**

- **Do not drive at any one speed — fast or slow — for the first 500 miles (805 km). Do not make full-throttle starts.**
- **Avoid making hard stops for the first 200 miles (322 km) or so. During this time your new brake linings are not yet broken in. Hard stops with new linings can mean premature wear and earlier replacement. Follow this breaking-in guideline every time you get new brake linings.**
- **Do not tow a trailer during break-in. See *Towing a Trailer (Automatic Transaxle) on page 4-37* or *Towing a Trailer (Manual Transaxle) on page 4-43* for more information.**

## Ignition Positions

With the key in the ignition, you can turn to five different positions.




**A (ACCESSORY):** This position operates your electrical accessories. Press in the ignition switch as you turn it toward you.



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**B (LOCK):** This position locks your ignition when the key is removed. The steering wheel locks with a manual transaxle. This is the only position from which you can remove the key. A warning chime will sound if you open the driver's door when the ignition is in LOCK and the key is in the ignition.

**⚠ CAUTION:**

**On manual transaxle vehicles, turning the key to LOCK will lock the steering column and result in a loss of ability to steer the vehicle. This could cause a collision. If you need to turn the engine off while the vehicle is moving, turn the key only to OFF. Don't press the key release button while the vehicle is moving.**

***Notice:*** **If your key seems stuck in LOCK and you can not turn it, be sure you are using the correct key; if so, is it all the way in? If it is, then turn the steering wheel left and right while you turn the key hard. Turn the key only with your hand. Using a tool to force it could break the key or the ignition switch. If none of these works, then your vehicle needs service.**

**C (OFF):** This position unlocks the steering wheel (for vehicle's equipped with a manual transaxle) and ignition, but does not send power to any accessories. Use this position if your vehicle must be pushed or towed, but never try to push-start your vehicle. A warning chime will sound if you open the driver's door when the ignition is in OFF and the key is in the ignition.

**D (RUN):** This is the position to which the switch returns after you start your engine and release the switch. The switch stays in RUN while the engine is running. But even while the engine is not running, you can use RUN to operate your electrical accessories, and to display some instrument panel warning lights.

**E (START):** This position starts the engine. When the engine starts, release the key. The ignition switch will return to RUN for normal driving.

Even if the engine is not running, ACCESSORY and RUN allow you to operate electrical accessories, such as the radio.

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## Key Release Button (Manual Transaxle)



The ignition key cannot be removed from the ignition unless the key release button is used.

To remove the key, turn the key to OFF. Then, while pressing the key release button in, turn the key to LOCK and pull it straight out.

## Retained Accessory Power (RAP)

Your vehicle is equipped with a Retained Accessory Power (RAP) feature which will allow the radio to continue to work up to 10 minutes after the ignition is turned to OFF.

Your radio will work when the ignition key is in RUN or ACCESSORY. Once the key is turned from RUN to OFF, the radio will continue to work for up to 10 minutes or until the driver's door is opened.

# Starting Your Engine

## Automatic Transaxle

Move your shift lever to PARK (P) or NEUTRAL (N). Your engine will not start in any other position — that is a safety feature. To restart when you are already moving, use NEUTRAL (N) only.

***Notice:*** **Shifting into PARK (P) with the vehicle moving could damage the transaxle. Shift into PARK (P) only when your vehicle is stopped.**

## Manual Transaxle

The shift lever should be in NEUTRAL and the parking brake engaged. Hold the clutch pedal to the floor and start the engine. Your vehicle will not start if the clutch pedal is not all the way down — that is a safety feature.

## Starting Your Engine

1. With your foot off the accelerator pedal, turn your ignition key to START. When the engine starts, let go of the key. The idle speed will go down as your engine gets warm.

***Notice:*** **Holding your key in START for longer than 15 seconds at a time will cause your battery to be drained much sooner. And the excessive heat can damage your starter motor. Wait about 15 seconds between each try to help avoid draining your battery or damaging your starter.**



DEP DEALER E-PROCESS

2. If it does not start, wait about 15 seconds and try again to start the engine by turning the ignition key to START. Wait about 15 seconds between each try.

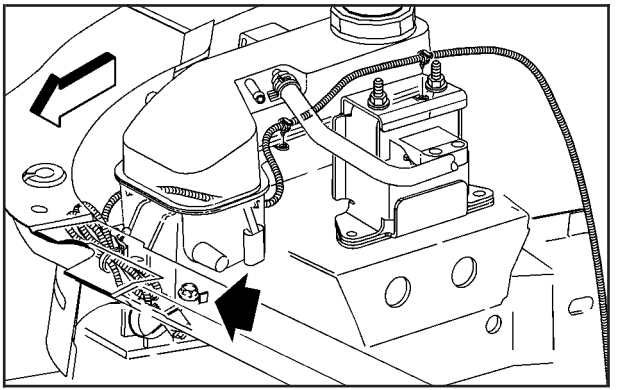
   When your engine has run about 10 seconds to warm up, your vehicle is ready to be driven. Do not run your engine at high speed when it is cold.

   If the weather is below freezing (32°F or 0°C), let the engine run for a few minutes to warm up.

3. If your engine still will not start, or starts but then stops, it could be flooded with too much gasoline. Try pushing your accelerator pedal all the way to the floor and holding it there as you hold the key in START for about three seconds. If the vehicle starts briefly but then stops again, do the same thing, but this time keep the pedal down for five or six seconds. This clears the extra gasoline from the engine.

***Notice:*** **Your engine is designed to work with the electronics in your vehicle. If you add electrical parts or accessories, you could change the way the engine operates. Before adding electrical equipment, check with your dealer. If you do not, your engine might not perform properly.**

## Engine Coolant Heater



If your vehicle has this feature, in very cold weather 0°F (–18°C) or colder, the engine coolant heater can help. You'll get easier starting and better fuel economy during engine warm-up. Usually, the coolant heater should be plugged in a minimum of four hours prior to starting your vehicle. At temperatures above 32°F (0°C), use of the coolant heater is not required.

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## To Use the Engine Coolant Heater

1. Turn off the engine.
2. Open the hood and unwrap the electrical cord. The electrical cord is located in front of the engine coolant surge tank on the passenger's side.
3. Plug it into a normal, grounded 110-volt AC outlet.

**⚠ CAUTION:**

**Plugging the cord into an ungrounded outlet could cause an electrical shock. Also, the wrong kind of extension cord could overheat and cause a fire. You could be seriously injured. Plug the cord into a properly grounded three-prong 110-volt AC outlet. If the cord will not reach, use a heavy-duty three-prong extension cord rated for at least 15 amps.**

4. Before starting the engine, be sure to unplug and store the cord as it was before to keep it away from moving engine parts. If you don't, it could be damaged.

How long should you keep the coolant heater plugged in? The answer depends on the outside temperature, the kind of oil you have, and some other things. Instead of trying to list everything here, we ask that you contact your dealer in the area where you'll be parking your vehicle. The dealer can give you the best advice for that particular area.

## Automatic Transaxle Operation

If your vehicle is equipped with an automatic transaxle, the shift lever is located on the console between the seats.

There are seven different positions for the automatic transaxle. See "Forward Gears" later in this section.



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**PARK (P):** This position locks your front wheels. It's the best position to use when you start your engine because your vehicle can't move easily.

> **⚠ CAUTION:**
>
> **It is dangerous to get out of your vehicle if the shift lever is not fully in PARK (P) with the parking brake firmly set. Your vehicle can roll.**
>
> **Do not leave your vehicle when the engine is running unless you have to. If you have left the engine running, the vehicle can move suddenly. You or others could be injured. To be sure your vehicle will not move, even when you are on fairly level ground, always set your parking brake and move the shift lever to PARK (P). See *Shifting Into Park (P) (Automatic Transaxle) on page 2-26*. If you are pulling a trailer, see *Towing a Trailer (Automatic Transaxle) on page 4-37* or *Towing a Trailer (Manual Transaxle) on page 4-43*.**

Ensure the shift lever is fully in PARK (P) before starting the engine. Your vehicle has an automatic transaxle shift lock control system. You have to fully apply your regular brakes before you can shift from PARK (P) when the ignition key is in RUN. If you cannot shift out of PARK (P), ease pressure on the shift lever by pushing the shift lever all the way into PARK (P) or releasing the shift lever button on floor shift console models as you maintain brake application. Then move the shift lever into the gear you want. Press the shift lever button before moving the shift lever. See *Shifting Out of Park (P) (Automatic Transaxle) on page 2-27*.

**REVERSE (R):** Use this gear to back up.

***Notice:*** **Shifting to REVERSE (R) while your vehicle is moving forward could damage the transaxle. The repairs would not be covered by your warranty. Shift to REVERSE (R) only after your vehicle is stopped.**

To rock your vehicle back and forth to get out of snow, ice or sand without damaging your transaxle, see If *You Are Stuck: In Sand, Mud, Ice or Snow on page 4-28*.

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**NEUTRAL (N):** In this position, your engine doesn't connect with the wheels. To restart when you're already moving, use NEUTRAL (N) only. Also, use NEUTRAL (N) when your vehicle is being towed.

**⚠ CAUTION:**

**Shifting into a drive gear while your engine is running at high speed is dangerous. Unless your foot is firmly on the brake pedal, your vehicle could move very rapidly. You could lose control and hit people or objects. Do not shift into a drive gear while your engine is running at high speed.**

***Notice:*** **Shifting out of PARK (P) or NEUTRAL (N) with the engine racing may damage the transaxle. The repairs would not be covered by your warranty. Be sure the engine is not racing when shifting your vehicle.**

## Forward Gears

**AUTOMATIC OVERDRIVE (D):** This position is for normal driving with the automatic transaxle. If you need more power for passing, and you're:

- Going less than about 35 mph (55 km/h), push your accelerator pedal about halfway down.
- Going about 35 mph (55 km/h), push your accelerator all the way down.

**THIRD (3):** This position is also used for normal driving. However, it offers more power and lower fuel economy than AUTOMATIC OVERDRIVE (D). Here are some times you might choose THIRD (3) instead of AUTOMATIC OVERDRIVE (D):

- When driving on hilly, winding roads.
- When going down a steep hill.

**SECOND (2):** This position gives you more power but lower fuel economy than THIRD (3). You can use SECOND (2) on hills. It can help control your speed as you go down steep mountain roads, but then you would also want to use your brakes off and on.



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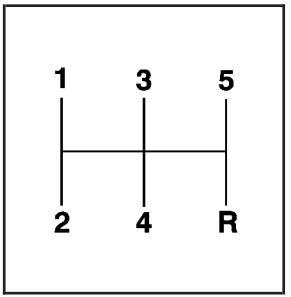
***Notice:*** **Driving in SECOND (2) for more than 25 miles (40 km) or at speeds over 55 mph (90 km/h) may damage the transaxle. Also, shifting into SECOND (2) at speeds above 65 mph (105 km/h) can cause damage. Drive in THIRD (3) or AUTOMATIC OVERDRIVE (D) instead of SECOND (2).**

**FIRST (1):** This position gives you even more power but lower fuel economy than SECOND (2). You can use it on very steep hills, or in deep snow or mud. If the shift lever is put in FIRST (1), the transaxle won't shift into first gear until the vehicle is going slowly enough.

***Notice:*** **Spinning the tires or holding the vehicle in one place on a hill using only the accelerator pedal may damage the transaxle. If you are stuck, do not spin the tires. When stopping on a hill, use the brakes to hold the vehicle in place.**

# Manual Transaxle Operation

## Five-Speed




This is your shift pattern.

Here is how to operate your manual transaxle:

**FIRST (1):** Press the clutch pedal and shift into FIRST (1). Then, slowly let up on the clutch pedal as you press the accelerator pedal.

You can shift into FIRST (1) when you are going less than 20 mph (32 km/h). If you have come to a complete stop and it is hard to shift into FIRST (1), put the shift lever in NEUTRAL (N) and let up on the clutch. Press the clutch pedal back down. Then shift into FIRST (1).

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**SECOND (2):** Press the clutch pedal as you let up on the accelerator pedal and shift into SECOND (2). Then, slowly let up on the clutch pedal as you press the accelerator pedal.

**THIRD (3), FOURTH (4) and FIFTH (5):** Shift into THIRD (3), FOURTH (4) and FIFTH (5), the same way you do for SECOND (2). Slowly let up on the clutch pedal as you press the accelerator pedal.

To stop, let up on the accelerator pedal and press the brake pedal. Just before the vehicle stops, press the clutch pedal and the brake pedal, and shift to NEUTRAL (N).

**NEUTRAL (N):** Use this position when you start or idle your engine.

**REVERSE (R):** To back up, press down the clutch pedal, lift up the ring on the shift lever and shift into REVERSE (R). Let up on the clutch pedal slowly while pressing the accelerator pedal.

***Notice:*** **Shifting to REVERSE (R) while your vehicle is moving forward could damage the transaxle. The repairs would not be covered by your warranty. Shift to REVERSE (R) only after your vehicle is stopped.**

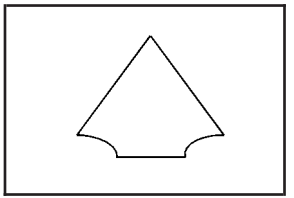
Also, use REVERSE (R), along with the parking brake, for parking your vehicle.

## Shift Speeds

**⚠ CAUTION:**

**If you skip a gear when you downshift, you could lose control of your vehicle. You could injure yourself or others. Don't shift down more than one gear at a time when you downshift.**

## Up-Shift Light



**United States Only**

If you have a manual transaxle, you have an up-shift light. This light will show you when to shift to the next higher gear for the best fuel economy.

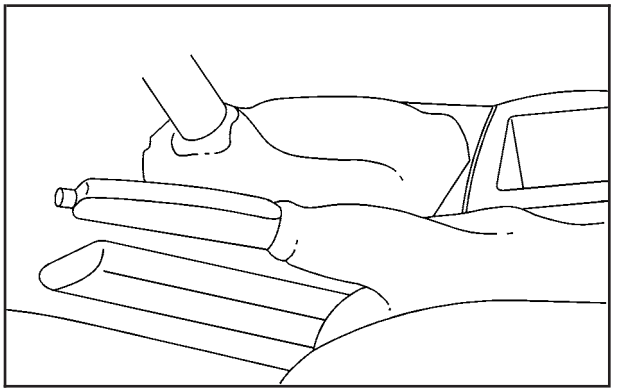
When this light comes on, you can shift to the next higher gear if weather, road and traffic conditions let you. For the best fuel economy, accelerate slowly and shift when the light comes on.



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While you accelerate, it is normal for the light to go on and off if you quickly change the position of the accelerator. Ignore the light when you downshift.

## Parking Brake



**Manual shown, Automatic similar**

The parking brake lever is located between the bucket seats.

To set the parking brake, hold the brake pedal down and pull up on the parking brake lever. If the ignition is on, the brake system warning light will come on.

To release the parking brake, hold the brake pedal down. Pull the parking brake lever up until you can press the release button. Hold the release button in as you move the brake lever all the way down.

If you forget to release your parking brake prior to driving away, a chime will sound to remind you to release the parking brake.

***Notice:*** **Driving with the parking brake on can overheat the brake system and cause premature wear or damage to brake system parts. Verify that the parking brake is fully released and the brake warning light is off before driving.**

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## Shifting Into Park (P) (Automatic Transaxle)

**⚠ CAUTION:**

**It can be dangerous to get out of your vehicle if the shift lever is not fully in PARK (P) with the parking brake firmly set. Your vehicle can roll. If you have left the engine running, the vehicle can move suddenly. You or others could be injured. To be sure your vehicle will not move, even when you are on fairly level ground, use the steps that follow. If you are pulling a trailer, see *Towing a Trailer (Automatic Transaxle) on page 4-37* or *Towing a Trailer (Manual Transaxle) on page 4-43*.**

1. Hold the brake pedal down and set the parking brake.
2. Move the shift lever into the PARK (P) position like this:
   - Hold in the button on the shift lever.
   - Push the lever all the way toward the front of your vehicle.
3. Turn the ignition key to LOCK.
4. Remove the key and take it with you. If you can leave your vehicle with the ignition key in your hand, your vehicle is in PARK (P).

## Leaving Your Vehicle With the Engine Running

**⚠ CAUTION:**

**It can be dangerous to leave your vehicle with the engine running. Your vehicle could move suddenly if the shift lever is not fully in PARK (P) with the parking brake firmly set. And, if you leave the vehicle with the engine running, it could overheat and even catch fire. You or others could be injured. Do not leave your vehicle with the engine running.**

If you have to leave your vehicle with the engine running, be sure your vehicle is in PARK (P) and your parking brake is firmly set before you leave it. After you've moved the shift lever into PARK (P), hold the regular brake pedal down. Then, see if you can move the shift lever away from PARK (P) without first pushing the button. If you can, it means that the shift lever wasn't fully locked into PARK (P).



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## Torque Lock

If you are parking on a hill and you don't shift your transaxle into PARK (P) properly, the weight of the vehicle may put too much force on the parking pawl in the transaxle. You may find it difficult to pull the shift lever out of PARK (P). This is called "torque lock." To prevent torque lock, set the parking brake and then shift into PARK (P) properly before you leave the driver's seat. To find out how, see *Shifting Into Park (P) (Automatic Transaxle) on page 2-26*.

When you are ready to drive, move the shift lever out of PARK (P) *before* you release the parking brake.

If torque lock does occur, you may need to have another vehicle push yours a little uphill to take some of the pressure from the parking pawl in the transaxle, so you can pull the shift lever out of PARK (P).

# Shifting Out of Park (P) (Automatic Transaxle)

Your vehicle has an automatic transaxle shift lock control system which locks the shift lever in PARK (P) when the ignition is in the LOCK position. In addition, you have to fully apply your regular brakes before you can shift from PARK (P) when the ignition is in RUN. See *Automatic Transaxle Operation on page 2-20*.

If you cannot shift out of PARK (P), ease pressure on the shift lever and push the shift lever all the way up into PARK (P) as you maintain brake application. Then, move the shift lever into the gear you want. Press the shift lever button before moving the shift lever.

If you ever hold the brake pedal down but still can't shift out of PARK (P), try this:

1. Turn the key to OFF. (There is no shift interlock in this key position.)
2. Apply and hold the brake until the end of Step 4.
3. Shift the transaxle to NEUTRAL (N).
4. Start the vehicle and then shift to the gear you want.
5. Have the system fixed as soon as you can.

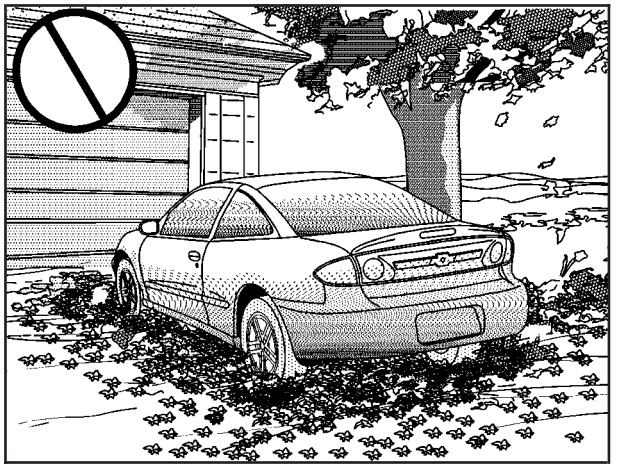
# Parking Your Vehicle (Manual Transaxle)

Before leaving your vehicle, fully press the clutch pedal in, move the shift lever into REVERSE (R), and firmly apply the parking brake. Once the shift lever has been placed in REVERSE (R) with the clutch pedal pressed in, you can turn the ignition key to OFF, remove the key and release the clutch.

See *Manual Transaxle Operation on page 2-23*.

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## Parking Over Things That Burn



**⚠ CAUTION:**

**Things that can burn could touch hot exhaust parts under your vehicle and ignite. Do not park over papers, leaves, dry grass or other things that can burn.**

## Engine Exhaust

**⚠ CAUTION:**

**Engine exhaust can kill. It contains the gas carbon monoxide (CO), which you can not see or smell. It can cause unconsciousness and death.**

**You might have exhaust coming in if:**

- **Your exhaust system sounds strange or different.**
- **Your vehicle gets rusty underneath.**
- **Your vehicle was damaged in a collision.**
- **Your vehicle was damaged when driving over high points on the road or over road debris.**
- **Repairs were not done correctly.**
- **Your vehicle or exhaust system had been modified improperly.**

**If you ever suspect exhaust is coming into your vehicle:**

- **Drive it only with all the windows down to blow out any CO; and**
- **Have your vehicle fixed immediately.**



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## Running Your Engine While You Are Parked

It is better not to park with the engine running. But if you ever have to, here are some things to know.

### ⚠ CAUTION:

**Idling the engine with the climate control system off could allow dangerous exhaust into your vehicle. See the earlier Caution under *Engine Exhaust on page 2-28*.**

**Also, idling in a closed-in place can let deadly carbon monoxide (CO) into your vehicle even if the climate control fan is at the highest setting. One place this can happen is a garage. Exhaust — with CO — can come in easily. NEVER park in a garage with the engine running.**

**Another closed-in place can be a blizzard. See *Winter Driving on page 4-24*.**

### ⚠ CAUTION:

**It can be dangerous to get out of your vehicle if the shift lever is not fully in PARK (P) with the parking brake firmly set. Your vehicle can roll. Do not leave your vehicle when the engine is running unless you have to. If you have left the engine running, the vehicle can move suddenly. You or others could be injured. To be sure your vehicle will not move, even when you are on fairly level ground, always set your parking brake and move the shift lever to PARK (P).**

Follow the proper steps to be sure your vehicle will not move. See *Shifting Into Park (P) (Automatic Transaxle) on page 2-26*.

If you are parking on a hill and if you are pulling a trailer, also see *Towing a Trailer (Automatic Transaxle) on page 4-37* or *Towing a Trailer (Manual Transaxle) on page 4-43*.

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# Mirrors

## Manual Rearview Mirror

To reduce glare from lamps behind you, move the lever toward you to the night position.

## Outside Remote Control Mirror

The outside rearview mirror should be adjusted so you can see a little of the side of your vehicle when you are sitting in a comfortable driving position.



Adjust the driver's outside mirror with the control lever located on the driver's door.

To adjust your passenger's outside mirror, sit in the driver's seat and have a passenger adjust the mirror for you.

The mirror is a spring-loaded breakaway design.

## Outside Power Mirrors



If your vehicle has this feature, the power mirror control is located on the driver's door.

Turn the control clockwise or counterclockwise to choose the mirror you want to adjust. Then move the control in the direction you want the mirror to move.

Adjust each mirror so you can see a little of the side of your vehicle when you are sitting in a comfortable driving position.

The mirror has a spring-loaded breakaway design.



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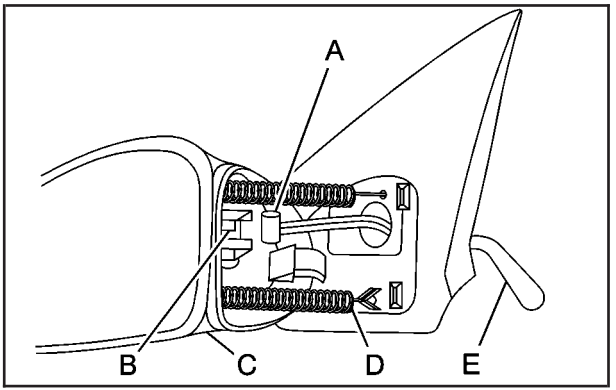
## Outside Convex Mirror

Your passenger's side mirror is convex. A convex mirror's surface is curved so you can see more from the driver's seat.

**⚠ CAUTION:**

**A convex mirror can make things (like other vehicles) look farther away than they really are. If you cut too sharply into the right lane, you could hit a vehicle on your right. Check your inside mirror or glance over your shoulder before changing lanes.**

## Outside Breakaway Mirror




A. Adjustment Lever T End
B. Lever Slide
C. Mirror
D. Spring
E. Adjustment Lever Handle

If the mirror control lever is unable to operate the mirror adjustment, you can reset the adjustment lever on the driver's side mirror only, by following these steps:

1. Roll down the driver's door window.
2. Fold the mirror toward the front of the vehicle. Hold the mirror in position with your left hand.

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3. With your right hand move the adjustment lever handle, located inside the vehicle, in order to align the T end of the lever with the lever slide.
4. Fold the mirror back to the original position in order to engage the T end of the lever with the lever slide.
5. Make sure the mirror housing is fully seated to its base.

# OnStar® System



Your vehicle may have this feature. OnStar® uses global positioning system (GPS) satellite technology, wireless communications, and state of the art call centers to provide you with a wide range of safety, security, information and convenience services.

A complete OnStar® user's guide and the terms and conditions of the OnStar® Subscription Service Agreement are included in your OnStar®-equipped vehicle's glove box literature. For more information, visit www.onstar.com, contact OnStar® at 1-888-4-ONSTAR (1-888-466-7827), or press the blue OnStar® button to speak to an OnStar® advisor 24 hours a day, 7 days a week.

A completed Subscription Service Agreement is required prior to delivery of OnStar® services and prepaid calling minutes are also required for OnStar® Personal Calling and OnStar® Virtual Advisor use. Terms and conditions of the Subscription Service Agreement can be found at www.onstar.com.

## OnStar® Services

One of the following plans is normally included for a specific duration with each vehicle equipped with OnStar®. You can upgrade or extend your OnStar® service plan to meet your needs.

### Safe and Sound Plan

- Automatic Notification of Air Bag Deployment
- Emergency Services
- Roadside Assistance
- Stolen Vehicle Assistance
- AccidentAssist
- Remote Door Unlock
- Remote Diagnostics
- Online Concierge



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### Directions and Connections Plan

- All Safe and Sound Plan services
- Route Support
- RideAssist
- Information and Convenience Services

### Luxury and Leisure Plan

- All Directions and Connections Plan services
- Personal Concierge

## OnStar® Personal Calling

With OnStar® Personal Calling, you have a safer way to stay connected while driving. It's a hands-free wireless phone that's integrated into your vehicle. You can place calls nationwide using voice-activated dialing with no contracts and no additional roaming charges. To find out more about OnStar® Personal Calling, refer to the OnStar® owner's guide in your vehicle's glove box, or call OnStar® at 1-888-4-ONSTAR (1-888-466-7827).

## OnStar® Virtual Advisor

With OnStar® Virtual Advisor you can listen to your favorite news, entertainment and information topics, such as traffic and weather reports, stock quotes and sports scores. You listen to your e-mail through your vehicle's speakers, and reply with your hands on the wheel and your eyes on the road.

# Storage Areas

## Cupholder(s)

There are two cupholders located at the front of the center console, in front of the shift lever. There are also cupholders for the rear seat passengers located under the center console lid. Open the center console lid all the way to uncover the rear cupholders. There may also be a large, removable cupholder inside of the center console lid.

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## Center Console Storage Area

To open the center console, pull the lift lever up and the lid back.

To close the center console, push the lid down until it clicks.

## Convenience Net

Your vehicle may have a convenience net. You'll see it inside the back wall of the trunk. Put small loads, like grocery bags, behind the net. It can help keep them from falling over during sharp turns or quick starts and stops.

Unclip a corner of the convenience net to fit larger objects behind the net, then reclip it to secure them in place. The net isn't for larger, heavier loads. Store them in the trunk as far forward as you can.

You can unhook the net so that it will lie flat when you're not using it.

## Sunroof




Your vehicle may have a sunroof. With the ignition on, press and hold the rear of the switch and the glass panel will open to the vent position.

Open the sunshade by hand when using the vent position.

Press and hold the rear of the switch again to open the glass panel and the sunshade. Release the switch to stop the panel in any position.

Press and hold the front of the switch to close the glass panel. The sunshade can only be closed by hand.

The sunroof glass panel cannot be opened or closed if your vehicle has an electrical failure.



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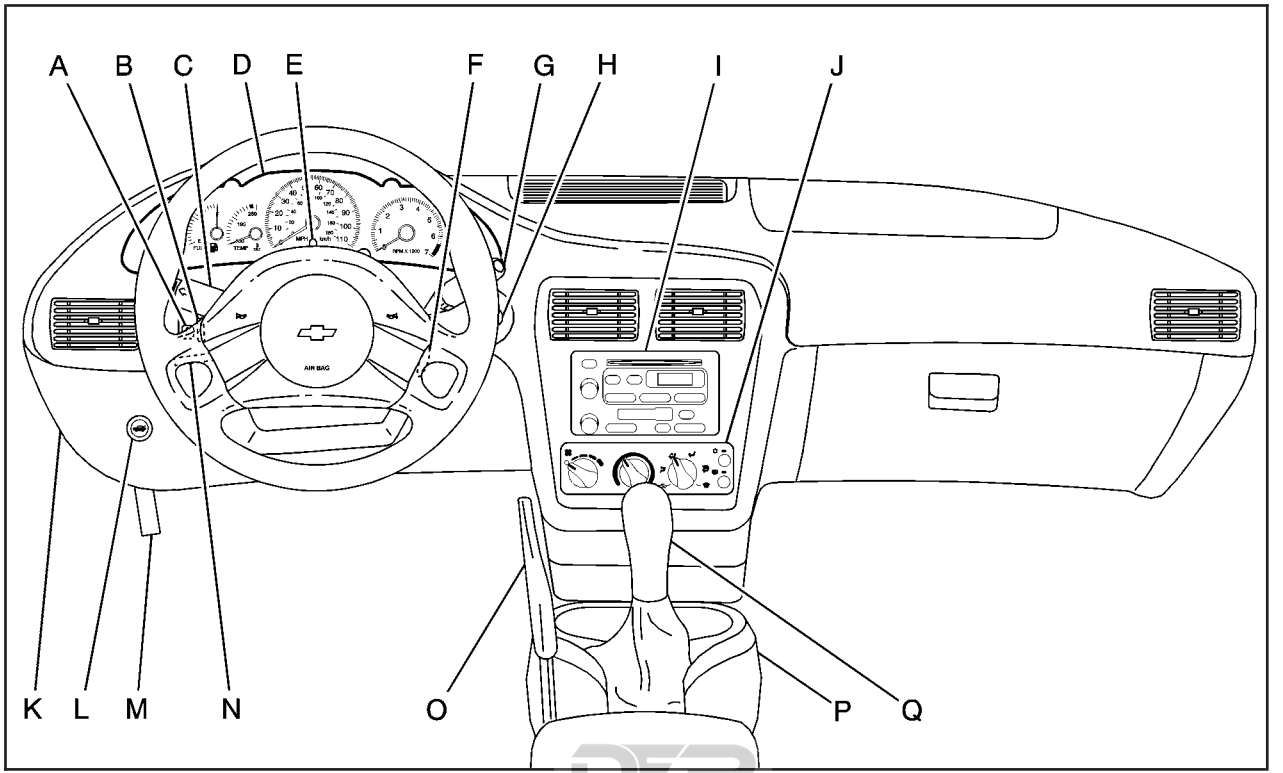
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# Instrument Panel Overview






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The main components of your instrument panel are the following:

A. Fog Lamp Button. See “Fog Lamps” under *Exterior Lamps on page 3-11*.

B. Instrument Panel Brightness Control. See “Instrument Panel Brightness” under *Interior Lamps on page 3-14*.

C. Turn Signal/Multifunction Lever. See *Turn Signal/Multifunction Lever on page 3-6*.

D. Instrument Panel Cluster. See *Instrument Panel Cluster on page 3-21*.

E. Hazard Warning Flashers Switch. See *Hazard Warning Flashers on page 3-4*.

F. Ignition Switch. See *Ignition Positions on page 2-16*.

G. Windshield Wiper/Washer Controls. See “Windshield Wipers” and “Windshield Washers” under *Turn Signal/Multifunction Lever on page 3-6*.

H. Cigarette Lighter. See *Ashtrays and Cigarette Lighter on page 3-16*.

I. Audio System. See *Audio System(s) on page 3-35*.

J. Climate Controls and Rear Window Defogger. See *Climate Control System on page 3-16*.

K. Fuse Panel. See “Instrument Panel Fuse Block” under *Fuses and Circuit Breakers on page 5-81*.

L. Remote Trunk Release Button. See “Remote Trunk Release” under *Trunk on page 2-10*.

M. Hood Release Lever. See *Hood Release on page 5-10*.

N. Tilt Steering Wheel Lever. See *Tilt Wheel on page 3-5*.

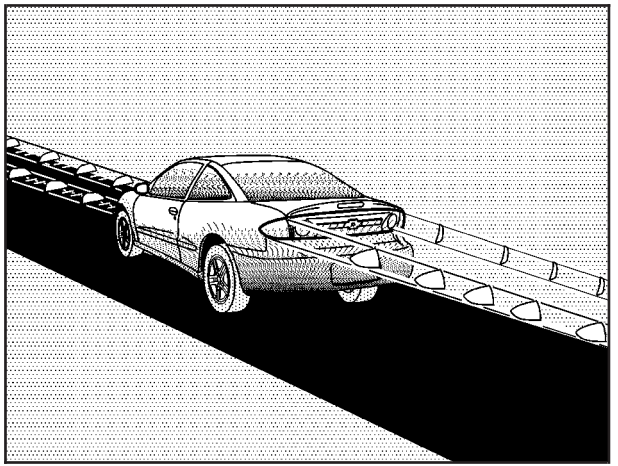
O. Parking Brake Lever. See *Parking Brake on page 2-25*.

P. Accessory Power Outlet. See *Accessory Power Outlets on page 3-15*.

Q. Shift Lever. See *Automatic Transaxle Operation on page 2-20* and *Manual Transaxle Operation on page 2-23*.

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## Hazard Warning Flashers



Your hazard warning flashers let you warn others. They also let police know you have a problem. Your front and rear turn signal lamps will flash on and off.



The hazard warning flasher switch is located on the top of the steering column.

Your hazard warning flashers work no matter what position your key is in, and even if the key isn't in.

Move the switch to the right to make the front and rear turn signal lamps flash on and off. Move the switch to the left to turn the flashers off.

When the hazard warning flashers are on, your turn signals won't work. Make sure the hazard warning flasher switch is all the way to the left for normal turn signal operation.



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## Other Warning Devices

If you carry reflective triangles, you can set one up at the side of the road about 300 feet (100 m) behind your vehicle.

## Horn

You can sound the horn by pressing the center of your steering wheel near the horn symbols.

## Tilt Wheel

Your vehicle may have a tilt wheel which allows you to adjust the steering wheel before you drive. You can raise it to the highest level to give your legs more room when you exit and enter the vehicle.

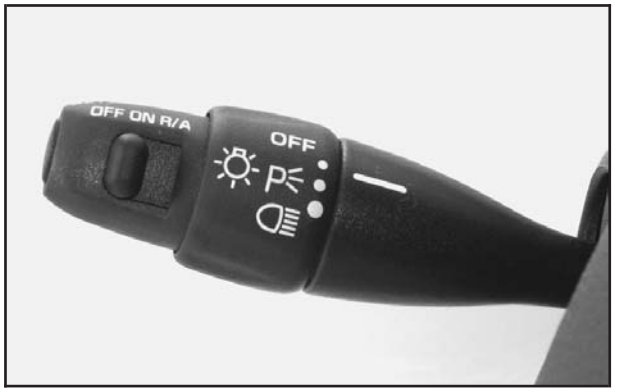
The lever that allows you to tilt the steering wheel is located on the left side of the steering column.



To tilt the wheel, hold the wheel and pull the lever. Then, move the wheel to a comfortable position and release the lever to lock the wheel in place.

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## Turn Signal/Multifunction Lever




The lever on the left side of the steering column includes the following:

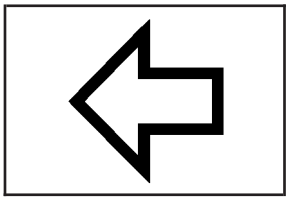
- Turn and Lane-Change Signals
- Headlamp High/Low-Beam Changer
- Flash-to-Pass
- Cruise Control

For information on the exterior lamps, see *Exterior Lamps on page 3-11*.

## Turn and Lane-Change Signals

The turn signal has two upward (for right) and two downward (for left) positions. These positions allow you to signal a turn or a lane change.

To signal a turn, move the lever all the way up or down. When the turn is finished, the lever will return automatically.



An arrow on the instrument panel cluster will flash in the direction of the turn or lane change.

To signal a lane change, just raise or lower the lever until the arrow starts to flash. Hold it there until you complete your lane change. The lever will return by itself when you release it.

As you signal a turn or a lane change, if the arrows flash rapidly, a signal bulb may be burned out and other drivers will not see your turn signal. If a bulb is burned out, replace it to help avoid an accident.

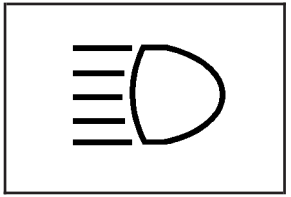
If the arrows do not go on at all when you signal a turn, check the fuse. See *Fuses and Circuit Breakers on page 5-81*.



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## Headlamp High/Low-Beam Changer

To change the headlamps from low beam to high or high beam to low, pull the turn signal lever all the way toward you. Then release it.



When the high beams are on, this light on the instrument panel cluster will also be on.

## Flash-to-Pass

This feature lets you use your high-beam headlamps to signal a driver in front of you that you want to pass.

To use it, pull the turn signal/multifunction lever toward you until the high-beam headlamps come on, then release the lever to turn them off.

## Cruise Control

If your vehicle has this feature, you can maintain a speed of about 25 mph (40 km/h) or more without keeping your foot on the accelerator. This can really help on long trips. Cruise control does not work at speeds below about 25 mph (40 km/h).

When you apply your brakes, or the clutch pedal if you have a manual transaxle, the cruise control shuts off.

**⚠ CAUTION:**

- **Cruise control can be dangerous where you can not drive safely at a steady speed. So, do not use your cruise control on winding roads or in heavy traffic.**
- **Cruise control can be dangerous on slippery roads. On such roads, fast changes in tire traction can cause needless wheel spinning, and you could lose control. Do not use cruise control on slippery roads.**

If your vehicle is in cruise control when the optional enhanced traction system begins to limit wheel spin, the cruise control will automatically disengage. See *Enhanced Traction System (ETS) on page 4-8*. When road conditions allow you to safely use it again, you may turn the cruise control back on.

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## Setting Cruise Control

**⚠ CAUTION:**

**If you leave your cruise control on when you are not using cruise, you might hit a button and go into cruise when you do not want to. You could be startled and even lose control. Keep the cruise control switch off until you want to use cruise control.**

1. Move the cruise control switch to ON.
2. Get up to the speed you want.
3. Push the SET button at the end of the lever and release it.
4. Take your foot off the accelerator pedal.

## Resuming a Set Speed

Suppose you set your cruise control at a desired speed and then you apply the brake or clutch pedal. This, of course, shuts off the cruise control. But you do not need to reset it. Once you are going about 25 mph (40 km/h) or more, you can briefly move the cruise control switch from ON to R/A. You will go right back up to your chosen speed and stay there.

If you hold the switch at R/A longer, the vehicle will keep going faster until you release the switch or apply the brake or clutch pedal. So unless you want to go faster, do not hold the switch at R/A.

## Increasing Speed While Using Cruise Control

There are two ways to go to a higher speed:

- Use the accelerator pedal to get to a higher speed. Push the SET button at the end of the lever, then release the button and the accelerator pedal. You will now cruise at the higher speed.
- Move the cruise control switch from ON to R/A. Hold it there until you get up to the speed you want, and then release the switch. To increase your speed in very small amounts, briefly move the switch to R/A then release it. Each time you do this, your vehicle will go about 1 mph (1.6 km/h) faster.



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## Reducing Speed While Using Cruise Control

There are two ways to reduce your speed while using cruise control:

- Push in the button at the end of the lever until you reach the lower speed you want, then release it.
- To slow down in very small amounts, briefly press the button. Each time you do this, you will go about 1 mph (1.6 km/h) slower.

## Passing Another Vehicle While Using Cruise Control

Use the accelerator pedal to increase your speed. When you take your foot off the pedal, your vehicle will slow down to the cruise control speed you set earlier.

## Using Cruise Control on Hills

How well your cruise control will work on hills depends upon your speed, load and the steepness of the hills. When going up a steep hill, you may have to step on the accelerator pedal to maintain your speed. When going downhill, you may have to brake or shift to a lower gear to keep your speed down. Of course, applying the brake or clutch pedal takes you out of cruise control. Many drivers find this to be too much trouble and do not use cruise control on steep hills.

## Ending Cruise Control

There are several ways to turn off the cruise control:

- Step lightly on the brake pedal, or push the clutch pedal, if you have a manual transaxle.
- Move the cruise switch to OFF.

## Erasing Speed Memory

When you turn off the cruise control or the ignition, your cruise control set speed memory is erased.

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## Windshield Wipers




Use the lever located on the right side of the steering wheel to operate the windshield wipers.

◯ **OFF:** Move the lever to OFF to turn off the windshield wipers.

▲ **DELAY:** If your vehicle has delay wipers, move the lever to DELAY to choose a delayed wiping cycle. Turn the lever down for a longer delay or up for a shorter delay. The further the lever is turned upward, the shorter the delay will be and the further the lever is turned downward, the longer the delay will be. The wiper speed can only be adjusted when the lever is in the DELAY position. Use this position for light rain or snow.

▲ **1 (Low Speed):** Move the lever up to the first setting past DELAY for steady wiping at low speed.

▲ **2 (High Speed):** Move the lever up to the second setting past DELAY for steady wiping at high speed.

▼ **MIST:** Move the lever all the way down to MIST for a single wiping cycle. Hold it there until the windshield wiper starts; then let go. The windshield wipers will stop after one wipe. If you want more wipes, hold the band on mist longer.

Heavy snow or ice can overload the wipers. If this occurs, a circuit breaker will stop the wipers until the wiper motor cools. So, be sure to clear any snow or ice from the windshield wiper blades before using them. If the wiper blades are frozen to the windshield, carefully loosen them or warm the windshield before turning the wipers on. If your blades do become worn or damaged, get new blades or blade inserts.



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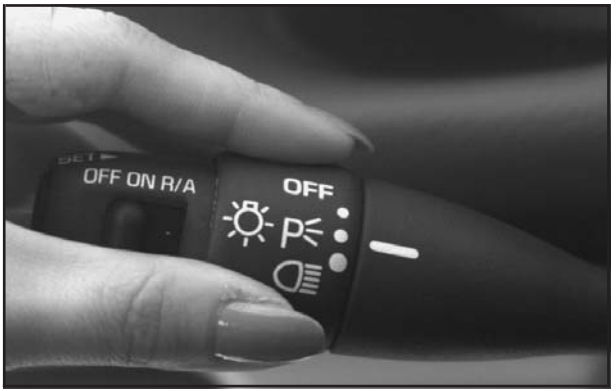
## Windshield Washers

To wash your windshield, pull the lever with the wiper symbol on it toward you one time. When you release the lever, the washers will stop. The wipers continue wiping for about three cycles and will then either stop or return to your preset speed.

**⚠ CAUTION:**

**In freezing weather, do not use your washer until the windshield is warmed. Otherwise the washer fluid can form ice on the windshield, blocking your vision.**

## Exterior Lamps




The exterior lamp band on the turn signal/multifunction lever controls the exterior lamps.

The exterior lamp band has three positions:

**OFF:** Turning the band to this position turns off all lamps, except the Daytime Running Lamps (DRL).

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**(Parking Lamps):** Turning the band to this position turns on the parking lamps, together with the following:

- Sidemarker Lamps
- Taillamps
- Instrument Panel Lights

**(Headlamps):** Turning the band to this position turns on the headlamps, together with the previously listed lamps and lights.

## Lamps On Reminder

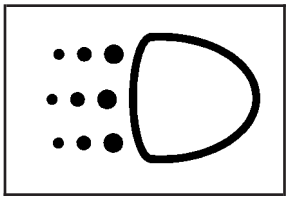
If you open the driver's door with the ignition off and the lamps on, you will hear a warning chime.

## Daytime Running Lamps

Daytime Running Lamps (DRL) can make it easier for others to see the front of your vehicle during the day. DRL can be helpful in many different driving conditions, but they can be especially helpful in the short periods after dawn and before sunset. Fully functional daytime running lamps are required on all vehicles first sold in Canada.

The DRL system will make your low-beam headlamps come on at a reduced brightness in daylight when the following conditions are met:

- The ignition is on.
- The exterior lamp band is in OFF or in the parking lamp position.
- The parking brake is released.
- The transaxle is not in PARK (P), on models with an automatic transaxle only.



This indicator light on your instrument panel cluster will come on when the DRL are on.

A flashing DRL telltale indicates a possible burned out headlamp, or that the vehicle may need service to repair a stuck DRL relay.



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When the DRL are on, your low-beam headlamps will be on at a reduced brightness. The taillamps, sidemarker and other lamps will not be on. Your instrument panel will not be lit up either.

When you turn the exterior lamp band to the headlamp position, your low-beam headlamps will come on. The other lamps that come on with your headlamps will also come on.

When you turn off the headlamps, the regular lamps will go off, and the low-beam headlamps will come on at the reduced brightness.

To idle your vehicle with the DRL off, set the parking brake. The DRL will stay off until you release the parking brake.

As with any vehicle, you should turn on the regular headlamp system when you need it.

## Fog Lamps

If your vehicle has this feature, use your fog lamps for better visibility in foggy or misty conditions.



The button for your fog lamps is located next to the instrument panel brightness control.

Push the top of the button to turn the fog lamps on. Push the top of the button again to turn the fog lamps off.

When using fog lamps, the parking lamps or low-beam headlamps must be on.

A light on the button will come on while the fog lamps are on. Fog lamps will go off while the high-beam headlamps are on.

Continuous use of the fog lamps will shorten bulb life. Limit use as necessary.

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# Interior Lamps

## Instrument Panel Brightness



The thumbwheel for this feature is located on the instrument panel to the left of the steering column.

Turn the thumbwheel up to brighten the lights or down to dim them. Turn the thumbwheel all the way up to turn on the interior courtesy lamps.

## Entry Lighting

When you open either a front door or a rear door, the lamps inside your vehicle will go on. In addition, if your vehicle is equipped with remote keyless entry, the light will come on when the remote keyless entry UNLOCK button is pressed.

After you exit the vehicle and all of the doors have been closed, the lamps will stay on for an additional 20 seconds before fading off. The lamps will also fade to off when the key is inserted and turned to RUN or ACCESSORY, or the LOCK button on the remote keyless entry transmitter is pressed.

## Front Reading Lamps

If your vehicle has this feature, these lamps are located on the rearview mirror. Turn each one on and off by pressing its button.

## Map Lamps

If your vehicle has this feature, these lamps are located in front of the dome lamp. To turn the lamps on and off, press the button.



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## Battery Run-Down Protection

Your vehicle is equipped with a battery saver feature designed to protect your vehicle's battery.

When any interior lamp (trunk, reading, dome, etc.) is left on and the ignition is turned off, the battery rundown protection system will automatically turn the lamp off after 20 minutes. This will avoid draining the battery. This system does not protect against leaving on the headlamps or parking lamps.

To reactivate the interior lamps, do one of the following:

- Turn the ignition on.
- Turn the activated interior lamp off, then on.
- Open any door.

The battery rundown protection feature will also be activated when any door is left open.

## Accessory Power Outlets

The accessory power outlet can be used to connect electrical equipment such as a cellular phone or CB radio.

The accessory power outlet is located on the lower console on the passenger's side.

To use the outlet, remove the cover. When not in use, always cover the outlet with the protective cap.

***Notice:*** **Leaving electrical equipment on for extended periods will drain the battery. Always turn off electrical equipment when not in use and do not plug in equipment that exceeds the maximum amperage rating.**

Certain electrical accessories may not be compatible with the accessory power outlet and could result in blown vehicle or adapter fuses. If you experience a problem, see your dealer for additional information on the accessory power outlet.

***Notice:*** **Adding any electrical equipment to your vehicle may damage it or keep other components from working as they should. The repairs would not be covered by your warranty. Check with your dealer before adding electrical equipment.**

When adding electrical equipment, be sure to follow the installation instructions included with the equipment.

***Notice:*** **Improper use of the power outlet can cause damage not covered by your warranty. Do not hang any type of accessory or accessory bracket from the plug because the power outlets are designed for accessory power plugs only.**

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## Ashtrays and Cigarette Lighter

Your vehicle may have an ashtray and cigarette lighter. To use the lighter, just push it in all the way and let go. When it's ready, it will pop back out by itself.

***Notice:*** **Holding a cigarette lighter in while it is heating will not allow the lighter to back away from the heating element when it is hot. Damage from overheating may occur to the lighter or heating element, or a fuse could be blown. Do not hold a cigarette lighter in while it is heating.**

To clean the center console ashtray, remove the entire ashtray and empty it. The ashtray can be placed in the rear cupholder for the rear seat passengers to use.

***Notice:*** **If you put papers or other flammable items in the ashtray, hot cigarettes or other smoking materials could ignite them and possibly damage your vehicle. Never put flammable items in the ashtray.**

# Climate Controls

## Climate Control System

With this system you can control the heating, cooling and ventilation for your vehicle.



## Operation

To change the current mode, select one of the following:

**(Vent):** This mode directs air to the instrument panel outlets.

**(Bi-Level):** This mode directs approximately half of the air to the instrument panel outlets, and then directs the remaining air to the floor outlets. Cooler air is directed to the upper outlets and warmer air to the floor outlets.



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**(Floor):** This mode directs most of the air to the floor outlets and outboard outlets (for the side windows) with some air directed to the windshield.

The right knob can also be used to select defrost mode. Information on defogging and defrosting can be found later in this section.

**(Fan):** Turn the left knob clockwise or counterclockwise to increase or decrease the fan speed. In any setting other than off, the fan will run continuously with the ignition on. The fan must be turned on to run the air conditioning compressor.

**(Off):** To turn the fan off, turn the knob all the way counterclockwise to the off position.

**(Recirculate):** This mode keeps outside air from coming in the vehicle. It can be used to prevent outside air and odors from entering your vehicle or to help heat or cool the air inside your vehicle more quickly. An indicator light will come on in this mode. The air-conditioning compressor also comes on. Operation in this mode during periods of high humidity and cool outside temperatures may result in increased window fogging. If window fogging is experienced, select the defrost mode.

**Temperature Control:** Turn the center knob clockwise or counterclockwise to manually increase or decrease the temperature inside your vehicle.

**(Air Conditioning):** Press this button to turn the air-conditioning system on or off. When this button is pressed, an indicator light above the button will come on to let you know the air conditioning is activated.

On hot days, open the windows to let hot inside air escape; then close them. This helps to reduce the time it takes for your vehicle to cool down. It also helps the system to operate more efficiently.

For quick cool down on hot days:

1. Select the recirculation mode.
2. Select air conditioning.
3. Select the coolest temperature.
4. Select the highest fan speed.

Using these settings together for long periods of time may cause the air inside of your vehicle to become too dry. To prevent this from happening, after the air in your vehicle has cooled, switch from recirculation to vent, bi-level or floor.

The air-conditioning system removes moisture from the air, so you may sometimes notice a small amount of water dripping underneath your vehicle while idling or after turning off the engine. This is normal.

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## Defogging and Defrosting

Fog on the inside of windows is a result of high humidity (moisture) condensing on the cool window glass. This can be minimized if the climate control system is used properly. There are two modes to clear fog or frost from your windshield and side windows. Use the defog mode to clear the windows of fog or moisture and warm the passengers. Use the defrost mode to remove fog or frost from the windshield more quickly. For best results, clear all snow and ice from the windshield before defrosting.

Turn the right knob to select the defog or defrost mode.

**(Defog):** This mode directs half of the air to the windshield and the side window outlets and half to the floor outlets. When you select this mode, the system runs the air-conditioning compressor unless the outside temperature is at or below freezing. The air-conditioning indicator light will also be on in this setting. To defog the windows faster, turn the temperature control knob clockwise to the warmest setting.

**(Defrost):** This mode directs most of the air to the windshield, with some air directed to the side window outlets and the floor outlets. When you select this mode, the system runs the air-conditioning compressor unless the outside temperature is at or below freezing. The air-conditioning indicator light will also be on in this setting.

To defog the side windows, set the right knob to floor and the fan knob to the highest setting. You can use the air conditioning while in this setting by pressing the air conditioning button. In both cases, aim the side outlets toward the side windows. For increased airflow to the side outlets, close the center outlets. Do not drive the vehicle until all the windows are clear.



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## Rear Window Defogger

The rear window defogger uses a warming grid to remove fog from the rear window.

The rear window defogger will only work when the ignition is in RUN.

**(Rear):** Press the button to turn the rear window defogger on or off. Be sure to clear as much snow from the rear window as possible. An indicator light above the button will come on to let you know that the rear window defogger is activated.

The rear window defogger will turn off about 10 minutes after the button is pressed. If turned on again, the defogger will only run for about five minutes before turning off. The defogger can also be turned off by pressing the button again or by turning off the engine.

***Notice:*** **Don't use anything sharp on the inside of the rear window. If you do, you could cut or damage the warming grid, and the repairs wouldn't be covered by your warranty. Do not attach a temporary vehicle license, tape, a decal or anything similar to the defogger grid.**

## Outlet Adjustment




Use the louvers located on the air outlets to change the direction of the airflow.

### Operation Tips

- Clear away any ice, snow or leaves from the air inlets at the base of the vehicle that may block the flow of air into your vehicle.
- Use of non-GM approved hood deflectors may adversely affect the performance of the system.
- Keep the path under the front seats clear of objects to help circulate the air inside of your vehicle more effectively.

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# Warning Lights, Gages and Indicators

This part describes the warning lights and gages that may be on your vehicle. The pictures will help you locate them.

Warning lights and gages can signal that something is wrong before it becomes serious enough to cause an expensive repair or replacement. Paying attention to your warning lights and gages could also save you or others from injury.

Warning lights come on when there may be or is a problem with one of your vehicle's functions. As you will see in the details on the next few pages, some warning lights come on briefly when you start the engine just to let you know they're working. If you are familiar with this section, you should not be alarmed when this happens.

Gages can indicate when there may be or is a problem with one of your vehicle's functions. Often gages and warning lights work together to let you know when there's a problem with your vehicle.

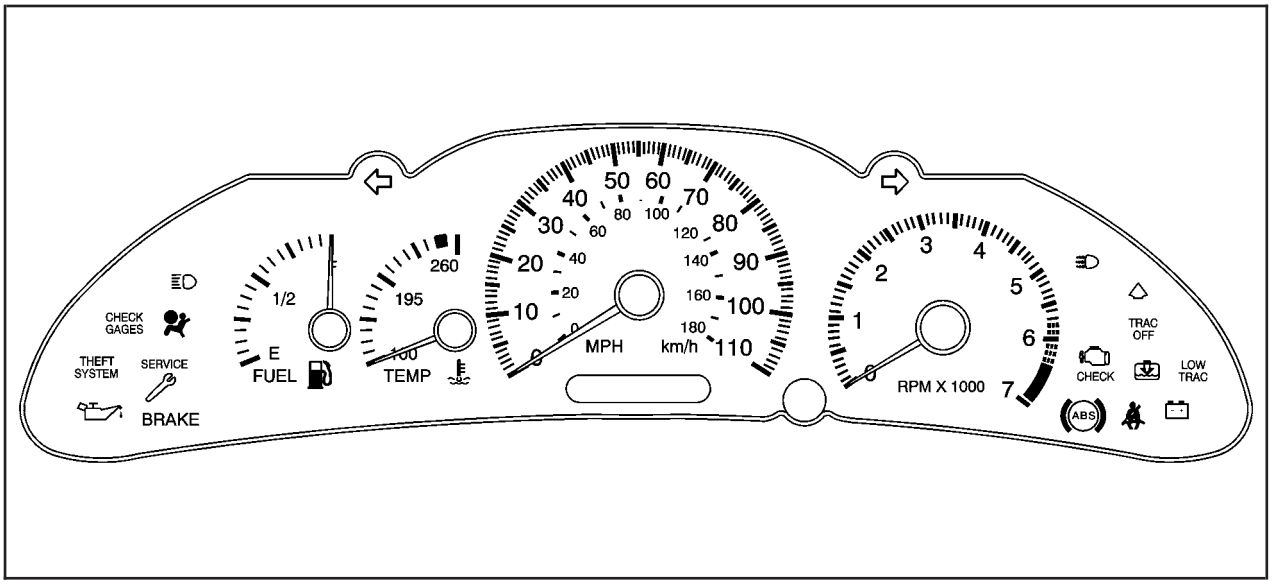
When one of the warning lights comes on and stays on when you are driving, or when one of the gages shows there may be a problem, check the section that tells you what to do about it. Please follow this manual's advice. Waiting to do repairs can be costly — and even dangerous. So please get to know your warning lights and gages. They're a big help.



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## Instrument Panel Cluster

Your instrument panel cluster is designed to let you know at a glance how your vehicle is running. You'll know how fast you're going, about how much fuel is left in the tank, and many other things you'll need to drive safely and economically.




**United States Cluster shown, Canada similar**

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## Speedometer and Odometer

Your speedometer lets you see your speed in both miles per hour (mph) and kilometers per hour (km/h). Your odometer shows how far your vehicle has been driven, in either miles (used in the United States) or kilometers (used in Canada).

Your odometer can be seen when the vehicle is running. To view it when the ignition is off, press the trip odometer button located near the display. The mileage will display for about five seconds.

### Trip Odometer

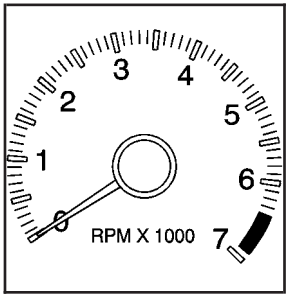
The trip odometer can tell you how far your vehicle has been driven since you last reset the trip odometer to zero.

Your trip odometer can be seen when the vehicle is running. To view it when the ignition is off, press the trip odometer button located near the display. You will first see the total miles your vehicle has traveled. Press it again to see the mileage since the trip odometer was last reset. The display will show the mileage for about five seconds.

The trip odometer reset button is located next to the odometer. By pressing the reset button, you can alternate between the season odometer and the trip odometer. To reset the trip odometer, press and hold the reset button for one or two seconds.

The odometer and trip odometer can be displayed with the ignition off by pressing the trip odometer reset button. The display will remain on for five seconds after the last time the reset button is pressed.

## Tachometer




The tachometer displays the engine speed in revolutions per minute (rpm).

***Notice:*** **If you operate the engine with the tachometer in the shaded warning area, your vehicle could be damaged, and the damages would not be covered by your warranty. Do not operate the engine with the tachometer in the shaded warning area.**



DEP DEALER E-PROCESS

## Safety Belt Reminder Light

When the key is turned to RUN or START, a chime will come on for several seconds to remind people to fasten their safety belts, unless the driver's safety belt is already buckled.

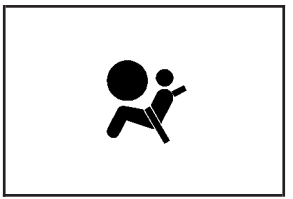


The safety belt light will also come on and stay on for several seconds, then it will flash for several more.

If the driver's belt is already buckled, neither the chime nor the light will come on.

## Air Bag Readiness Light

There is an air bag readiness light on the instrument panel, which shows the air bag symbol. The system checks the air bag's electrical system for malfunctions. The light tells you if there is an electrical problem. The system check includes the air bag sensor, the air bag modules, the wiring and the crash sensing and diagnostic module. For more information on the air bag system, see *Air Bag Systems on page 1-47*.



This light will come on when you start your vehicle, and it will flash for a few seconds. Then the light should go out. This means the system is ready.

DEP
DEALER E-PROCESS

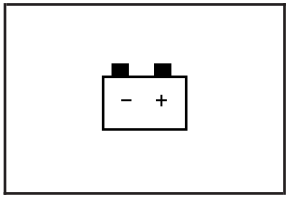
If the air bag readiness light stays on after you start the vehicle or comes on when you are driving, your air bag system may not work properly. Have your vehicle serviced right away.

**⚠ CAUTION:**

**If the air bag readiness light stays on after you start your vehicle, it means the air bag system may not be working properly. The air bags in your vehicle may not inflate in a crash, or they could even inflate without a crash. To help avoid injury to yourself or others, have your vehicle serviced right away if the air bag readiness light stays on after you start your vehicle.**

The air bag readiness light should flash for a few seconds when you turn the ignition key to RUN. If the light doesn't come on then, have it fixed so it will be ready to warn you if there is a problem.

## Charging System Light




The charging system light will come on briefly when you turn on the ignition, and the engine is not running, as a check to show you it is working.

Then it should go out when the engine is started.

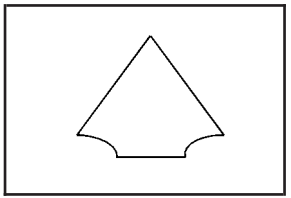
If it stays on, or comes on while you are driving, you may have a problem with the electrical charging system. It could indicate that you have a loose generator drive belt, or another electrical problem. Have it checked right away. Driving while this light is on could drain your battery.

If you must drive a short distance with the light on, be certain to turn off all your accessories, such as the radio and air conditioner.



DEP DEALER E-PROCESS

## Up-Shift Light



United States Only

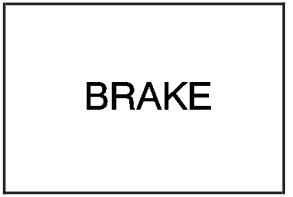
If you have a manual transaxle you have this light. This light comes on when you need to shift to the next higher gear.

See *Manual Transaxle Operation on page 2-23*.

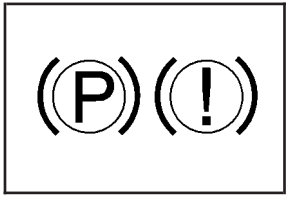
## Brake System Warning Light

Your vehicle's hydraulic brake system is divided into two parts. If one part isn't working, the other part can still work and stop you. For good braking, though, you need both parts working well.

If the warning light comes on, there is a brake problem. Have your brake system inspected right away.




United States




Canada

This light should come on briefly when you turn the ignition key to RUN. If it doesn't come on then, have it fixed so it will be ready to warn you if there's a problem.

When the ignition is on, the brake system warning light will also come on when you set your parking brake. The light will stay on if your parking brake doesn't release fully. If it stays on after your parking brake is fully released, it means you have a brake problem.

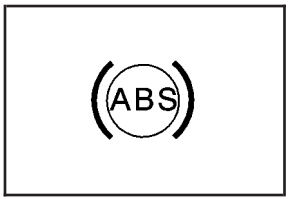
DEP
DEALER E-PROCESS

If the light comes on while you are driving, pull off the road and stop carefully. You may notice that the pedal is harder to push. Or, the pedal may go closer to the floor. It may take longer to stop. If the light is still on, have the vehicle towed for service. See *Towing Your Vehicle on page 4-29*.

**⚠ CAUTION:**

**Your brake system may not be working properly if the brake system warning light is on. Driving with the brake system warning light on can lead to an accident. If the light is still on after you have pulled off the road and stopped carefully, have the vehicle towed for service.**

## Anti-Lock Brake System Warning Light




If your vehicle is equipped with the anti-lock brake system, the light will come on when your engine is started and may stay on for several seconds. That's normal.

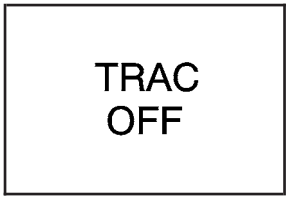
If the light stays on, turn the ignition to OFF. Or, if the light comes on when you're driving, stop as soon as possible and turn the ignition off. Then start the engine again to reset the system. If the light still stays on, or comes on again while you're driving, your vehicle needs service. If the regular brake system warning light isn't on, you still have brakes, but you don't have anti-lock brakes. If the regular brake system warning light is also on, you don't have anti-lock brakes and there's a problem with your regular brakes. See *Brake System Warning Light on page 3-25*.

The anti-lock brake system warning light will come on briefly when you turn the ignition key to RUN. This is normal. If the light doesn't come on then, have it fixed so it will be ready to warn you if there is a problem.

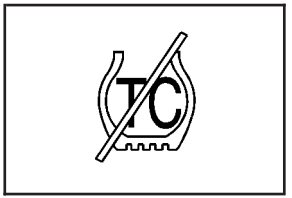


DEP DEALER E-PROCESS

## Enhanced Traction System Warning Light




**United States**




**Canada**

If your vehicle is equipped with the Enhanced Traction System (ETS), this warning light should come on briefly as you start the engine. If the warning light doesn't come on, then have it fixed so it will be ready to warn you if there's a problem.

If the warning light stays on, or comes on when you're driving, there may be a problem with your Enhanced Traction System and your vehicle may need service. When this warning light is on, the system will not limit wheel spin. Adjust your driving accordingly.

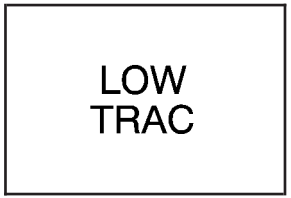
The Enhanced Traction System warning light may come on for the following reasons:

- If you turn the system off by moving the shift lever to FIRST (1) or SECOND (2), the warning light will come on and stay on. To turn the system back on, move the shift lever back to a position other than FIRST (1) or SECOND (2). The warning light should go off. See *Enhanced Traction System (ETS) on page 4-8* for more information.
- The warning light will come on when you set your parking brake with the engine running, and it will stay on if your parking brake doesn't release fully. If the transaxle shift lever is in any position other than FIRST (1) or SECOND (2) and the warning light stays on after your parking brake is fully released, it means there's a problem with the system.
- If the traction control system is affected by an engine-related problem, the system will turn off and the warning light will come on.
- If the vehicle is driven on an extremely rough road, the warning light may come on momentarily but will go off again when the vehicle leaves the rough surface.

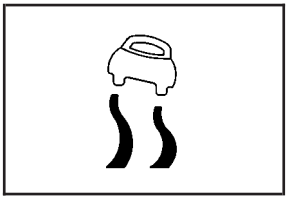
If the Enhanced Traction System warning light comes on and stays on for an extended period of time when the transaxle shift lever is in any position other than FIRST (1) or SECOND (2), your vehicle needs service.

DEP
DEALER E-PROCESS

## Enhanced Traction System Active Light




United States



Canada

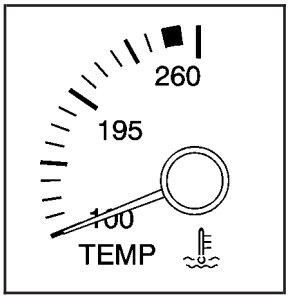
When your Enhanced Traction System is limiting wheel spin, this light will come on. Slippery road conditions may exist if the Enhanced Traction System active light comes on, so adjust your driving accordingly.

This light may also come on when the anti-lock brake system is active.

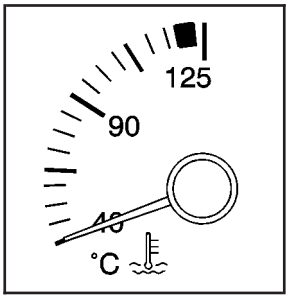
The light will stay on for a few seconds after the Enhanced Traction System stops limiting wheel spin.

The Enhanced Traction System active light also comes on briefly when you turn the ignition key to RUN. If the light doesn't come on then, have it fixed so it will be there to tell you when the system is active.

## Engine Coolant Temperature Gage




United States




Canada

Your vehicle is equipped with one of these gages. With the ignition in RUN, this gage shows the engine coolant temperature.

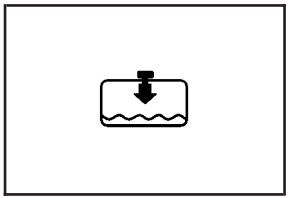
If the gage pointer moves into the red area, your engine is too hot! It means that your engine coolant has overheated. The CHECK GAGES light should come on if this condition exists. See *Check Gages Warning Light on page 3-33* for more information. If you have been operating your vehicle under normal conditions, you should pull off the road, stop your vehicle and turn off the engine as soon as possible.

See *Engine Overheating on page 5-23*.



DEP
DEALER E-PROCESS

## Low Coolant Warning Light



This light comes on briefly when you turn your ignition on.

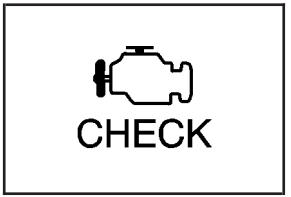
If this light comes on and stays on, the coolant level in your vehicle is low. If the light is on along with an overheat warning, you may have a serious overheating problem. See *Engine Coolant Temperature Gage on page 3-28*.

***Notice:*** **If you operate the engine without coolant or fail to maintain the cooling system properly, you could damage the engine. The repairs would not be covered by your warranty. Always follow the maintenance schedule in this manual for maintaining your cooling system. See *Cooling System on page 5-25* for more information.**

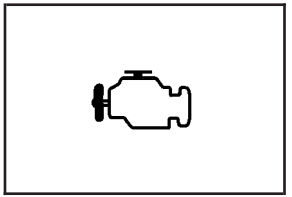
See *Engine Coolant on page 5-20* for information on what to do. Your vehicle should be serviced as soon as possible.

## Malfunction Indicator Lamp

### Check Engine Light




**United States**



**Canada**

Your vehicle is equipped with a computer which monitors operation of the fuel, ignition and emission control systems.

This system is called OBD II (On-Board Diagnostics-Second Generation) and is intended to assure that emissions are at acceptable levels for the life of the vehicle, helping to produce a cleaner environment. The CHECK ENGINE light comes on to indicate that there is a problem and service is required. Malfunctions often will be indicated by the system before any problem is apparent. This may prevent more serious damage to your vehicle. This system is also designed to assist your service technician in correctly diagnosing any malfunction.

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***Notice:*** **If you keep driving your vehicle with this light on, after a while, your emission controls may not work as well, your fuel economy may not be as good and your engine may not run as smoothly. This could lead to costly repairs that may not be covered by your warranty.**

***Notice:*** **Modifications made to the engine, transaxle, exhaust, intake or fuel system of your vehicle or the replacement of the original tires with other than those of the same Tire Performance Criteria (TPC) can affect your vehicle's emission controls and may cause this light to come on. Modifications to these systems could lead to costly repairs not covered by your warranty. This may also result in a failure to pass a required Emission Inspection/Maintenance test.**

This light should come on, as a check to show you it is working, when the ignition is on and the engine is not running. If the light does not come on, have it repaired. This light will also come on during a malfunction in one of two ways:

- **Light Flashing** — A misfire condition has been detected. A misfire increases vehicle emissions and may damage the emission control system on your vehicle. Diagnosis and service may be required.
- **Light On Steady** — An emission control system malfunction has been detected on your vehicle. Diagnosis and service may be required.

## If the Light Is Flashing

The following may prevent more serious damage to your vehicle:

- Reducing vehicle speed.
- Avoiding hard accelerations.
- Avoiding steep uphill grades.
- If you are towing a trailer, reduce the amount of cargo being hauled as soon as it is possible.

If the light stops flashing and remains on steady, see "If the Light Is On Steady" following.

If the light continues to flash, when it is safe to do so, *stop the vehicle.*

Find a safe place to park your vehicle. Turn the key off, wait at least 10 seconds and restart the engine. If the light remains on steady, see "If the Light Is On Steady" following. If the light is still flashing, follow the previous steps, and see your dealer for service as soon as possible.



DEP DEALER E-PROCESS

## If the Light Is on Steady

You also may be able to correct the emission system malfunction by considering the following:

Did you recently put fuel into your vehicle?

If so, reinstall the fuel cap, making sure to fully install the cap. See *Filling Your Tank on page 5-7*. The diagnostic system can determine if the fuel cap has been left off or improperly installed. A loose or missing fuel cap will allow fuel to evaporate into the atmosphere. A few driving trips with the cap properly installed should turn the light off.

Did you just drive through a deep puddle of water?

If so, your electrical system may be wet. The condition will usually be corrected when the electrical system dries out. A few driving trips should turn the light off.

Have you recently changed brands of fuel?

If so, be sure to fuel your vehicle with quality fuel. See *Gasoline Octane on page 5-4*. Poor fuel quality will cause your engine not to run as efficiently as designed. You may notice this as stalling after start-up, stalling when you put the vehicle into gear, misfiring, hesitation on acceleration or stumbling on acceleration. (These conditions may go away once the engine is warmed up.) This will be detected by the system and cause the light to turn on.

If you experience one or more of these conditions, change the fuel brand you use. It will require at least one full tank of the proper fuel to turn the light off.

If none of the above steps have made the light turn off, your dealer can check the vehicle. Your dealer has the proper test equipment and diagnostic tools to fix any mechanical or electrical problems that may have developed.

## Emissions Inspection and Maintenance Programs

Some state/provincial and local governments have or may begin programs to inspect the emission control equipment on your vehicle. Failure to pass this inspection could prevent you from getting a vehicle registration.

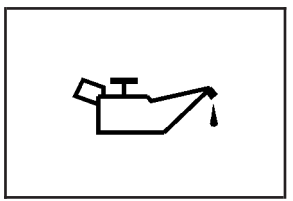
Here are some things you need to know to help your vehicle pass an inspection:

Your vehicle will not pass this inspection if the Check Engine light is on or not working properly.

DEP
DEALER E-PROCESS

Your vehicle will not pass this inspection if the OBD (on-board diagnostic) system determines that critical emission control systems have not been completely diagnosed by the system. The vehicle would be considered not ready for inspection. This can happen if you have recently replaced your battery or if your battery has run down. The diagnostic system is designed to evaluate critical emission control systems during normal driving. This may take several days of routine driving. If you have done this and your vehicle still does not pass the inspection for lack of OBD system readiness, your GM dealer can prepare the vehicle for inspection.

## Oil Pressure Light



If you have a low engine oil pressure problem, this light will stay on after you start your engine, or come on when you are driving. This indicates that your engine is not receiving enough oil.

The engine could be low on oil, or could have some other oil problem. Have it fixed immediately.

The oil light could also come on in three other situations:

- When the ignition is on but the engine is not running, the light will come on as a test to show you it is working, but the light will go out when you turn the ignition to START. If it doesn't come on with the ignition on, you may have a problem with the fuse or bulb. Have it fixed right away.
- If you're idling at a stop sign, the light may blink on and then off.
- If you make a hard stop, the light may come on for a moment. This is normal.

**⚠ CAUTION:**

**Do not keep driving if the oil pressure is low. If you do, your engine can become so hot that it catches fire. You or others could be burned. Check your oil as soon as possible and have your vehicle serviced.**

***Notice:*** **Lack of proper engine oil maintenance may damage the engine. The repairs would not be covered by your warranty. Always follow the maintenance schedule in this manual for changing engine oil.**

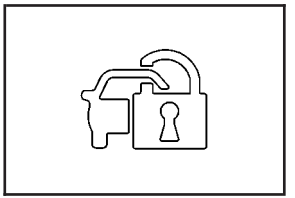


DEP DEALER E-PROCESS

## Passlock® Warning Light




United States



Canada

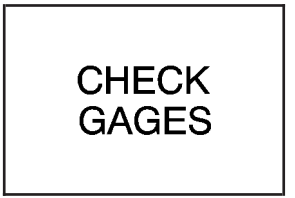
This light will come on briefly when you turn the key to START.

If the light flashes, the Passlock® system has entered a tamper mode. If the vehicle fails to start, see *Passlock® on page 2-15*.

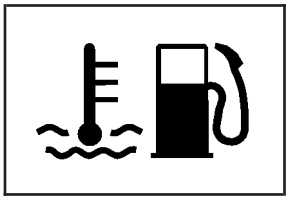
On vehicles equipped with the remote keyless entry system, when the ignition is off and the security system is armed, the light will flash to indicate that the security system is active.

If the light comes on continuously while driving and stays on, there may be a problem with the Passlock® system. Your vehicle will not be protected by Passlock®, and you should see your dealer.

## Check Gages Warning Light




United States



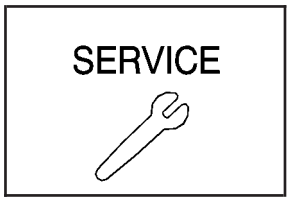
Canada

This light will come on briefly when you are starting the engine. If it comes on and stays on while you are driving, check your various gages to see if they are in the warning zones or if you are low on fuel.

See *Engine Coolant Temperature Gage on page 3-28* and *Fuel Gage on page 3-34*.

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DEALER E-PROCESS

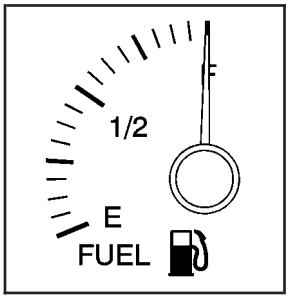
## Service Vehicle Soon Light



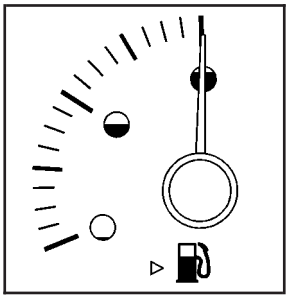

This light will come on briefly when you turn on the ignition.

It will stay on or come on if it detects a problem on the vehicle. If this happens, see your dealer's service department as soon as possible.

## Fuel Gage




**United States**



**Canada**

Your fuel gage tells you about how much fuel you have left. When the indicator nears empty, the CHECK GAGES light will come on. You still have about 1.5 gallons (5.7 L) of fuel left, but you should get more soon. See *Check Gages Warning Light on page 3-33* earlier in this section for more information.



DEP
DEALER E-PROCESS

Here are four things that some owners ask about. None of these show a problem with your fuel gage:

- At the service station, the gas pump shuts off before the gage reads full.
- It takes a little more or less fuel to fill up than the gage indicated. For example, the gage may have indicated the tank was half full, but it actually took a little more or less than half the tank's capacity to fill the tank.
- The gage moves a little when you turn a corner or speed up.
- The gage doesn't go back to empty when you turn off the ignition.

For your fuel tank capacity, see *Capacities and Specifications on page 5-85*.

# Audio System(s)

***Notice:*** **Before you add any sound equipment to your vehicle – like a tape player, CB radio, mobile telephone or two-way radio – be sure you can add what you want. If you can, it's very important to do it properly. Added sound equipment may interfere with the operation of your vehicle's engine, radio or other systems, and even damage them.**

**Your vehicle's systems may interfere with the operation of sound equipment that has been added improperly.**

**So, before adding sound equipment, check with your dealer and be sure to check federal rules covering mobile radio and telephone units.**

Your audio system has been designed to operate easily and to give years of listening pleasure. You will get the most enjoyment out of it if you acquaint yourself with it first. Figure out which radio you have in your vehicle, find out what your audio system can do and how to operate all of its controls to be sure you're getting the most out of the advanced engineering that went into it.

Your vehicle has a feature called Retained Accessory Power (RAP). With RAP, you can play your audio system even after the ignition is turned off. See "Retained Accessory Power (RAP)" under *Ignition Positions on page 2-16*.

## Setting the Time for Radios without Radio Data Systems (RDS)

Press and hold the HR or MIN arrow for two seconds. Then press the HR arrow until the correct hour appears on the display. Press and hold the MIN arrow until the correct minute appears on the display. The time may be set with the ignition on or off.

DEP DEALER E-PROCESS

## Setting the Time for Radios with Radio Data Systems (RDS)

Press and hold the HR or MN buttons for two seconds. Then press and hold HR until the correct hour appears on the display. AM or PM will appear for morning or evening hours. Press and hold MN until the correct minute appears on the display. The time may be set with the ignition on or off. The clock symbol will appear on the display in time-set mode.

To synchronize the time with an FM station broadcasting Radio Data System (RDS) information, press and hold HR and MN at the same time for two seconds until UPDATED and the clock symbol appear on the display. If the time is not available from the station, NO UPDAT will appear on the display.

RDS time is broadcast once a minute. Once you have tuned to an RDS broadcast station, it may take a few minutes for your time to update.

## AM-FM Radio




## Playing the Radio

**PWR (Power):** Press this knob to turn the system on and off.

**VOL (Volume):** Turn this knob to increase or to decrease volume.

**RCL (Recall):** Press this knob to switch the display between the radio station frequency and the time. Time display is available with the ignition turned off.



DEP DEALER E-PROCESS

## Finding a Station

**AM FM:** Press this button to switch between FM1, FM2, or AM. The display will show your selection.

**TUNE:** Turn this knob to select radio stations.

◁ **SEEK** ▷ **:** Press the right or the left arrow to go to the next or to the previous station and stay there.

To scan stations, press and hold either SEEK arrow for two seconds until you hear a beep. The radio will go to a station, play for a few seconds, then go on to the next station. Press either SEEK arrow again to stop scanning.

To scan preset stations, press and hold either SEEK arrow for more than four seconds until you hear two beeps. The radio will go to the first preset station stored on your pushbuttons, play for a few seconds, then go on to the next preset station. Press either SEEK arrow again to stop scanning presets.

The radio will seek and scan only to stations that are in the selected band and only to those with a strong signal.

## Setting Preset Stations

The six numbered pushbuttons let you return to your favorite stations. You can set up to 18 stations (six FM1, six FM2, and six AM) by performing the following steps:

1. Turn the radio on.
2. Press AM FM to select FM1, FM2, or AM.
3. Tune in the desired station.
4. Press and hold one of the six numbered pushbuttons until you hear a beep. Whenever you press that numbered pushbutton, the station you set will return.
5. Repeat the steps for each pushbutton.

## Setting the Tone (Bass/Treble)

**AUDIO:** To adjust the bass and the treble, press and release the AUDIO button until BAS or TRE appears on the display. Then press and hold the up or the down arrow to increase or to decrease. If a station is weak or noisy, you may want to decrease the treble.

To adjust bass or treble to the middle position, select BAS or TRE. Then press and hold the AUDIO button for more than two seconds until you hear a beep. B and a zero or T and a zero will appear on the display.

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To adjust both tone controls and both speaker controls to the middle position, first end out of audio mode by pressing another button, causing the radio to perform that function, or by waiting five seconds for the display to return to time of day. Then press and hold the AUDIO button for more than two seconds until you hear a beep. CEN will appear on the display.

## Adjusting the Speakers (Balance/Fade)

**AUDIO:** To adjust the balance between the right and the left speakers, press and release the AUDIO button until BAL appears on the display. Then press and hold the up or the down arrow to move the sound toward the right or the left speakers.

To adjust the fade between the front and the rear speakers, press and release the AUDIO button until FAD appears on the display. Then press and hold the up or the down arrow to move the sound toward the front or the rear speakers.

To adjust balance or fade to the middle position, select BAL or FAD. Then press and hold the AUDIO button for more than two seconds until you hear a beep. L and a zero or F and a zero will appear on the display.

To adjust both tone controls and both speaker controls to the middle position, first end out of audio mode by pressing another button, causing the radio to perform that function, or by waiting five seconds for the display to return to time of day. Then press and hold the AUDIO button for more than two seconds until you hear a beep. CEN will appear on the display.

## Radio Messages

**CAL (Calibration):** Your audio system has been calibrated for your vehicle from the factory. If CAL appears on the display it means that your radio has not been configured properly for your vehicle and must be returned to the dealer for service.

**LOC (Locked):** This message is displayed when the THEFTLOCK® system has locked up. You must return to the dealer for service.



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## Radio with CD (Base Level)




## Playing the Radio

**PWR (Power):** Press this knob to turn the system on and off.

**VOL (Volume):** Turn this knob to increase or to decrease volume.

**RCL (Recall):** Press this knob to switch the display between the radio station frequency and the time. Time display is available with the ignition turned off.

## Finding a Station

**AM FM:** Press this button to switch between FM1, FM2, and AM. The display will show your selection.

**TUNE:** Turn this knob to select radio stations.

◁ **SEEK** ▷ **:** Press the right or the left arrow to go to the next or to the previous station and stay there.

To scan stations, press and hold either SEEK arrow for two seconds until you hear a beep. The radio will go to a station, play for a few seconds, then go on to the next station. Press either SEEK arrow again to stop scanning.

To scan preset stations, press and hold either SEEK arrow for more than four seconds until you hear two beeps. The radio will go to the first preset station stored on your pushbuttons, play for a few seconds, then go on to the next preset station. Press either SEEK arrow again to stop scanning presets.

The radio will seek and scan only to stations that are in the selected band and only to those with a strong signal.

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## Setting Preset Stations

The six numbered pushbuttons let you return to your favorite stations. You can set up to 18 stations (six FM1, six FM2, and six AM) by performing the following steps:

1. Turn the radio on.
2. Press AM FM to select FM1, FM2, or AM.
3. Tune in the desired station.
4. Press and hold one of the six numbered pushbuttons until you hear a beep. Whenever you press that numbered pushbutton, the station you set will return.
5. Repeat the steps for each pushbutton.

## Setting the Tone (Bass/Treble)

**AUDIO:** To adjust the bass or the treble, press and release the AUDIO button until BAS or TRE appears on the display. Then press and hold the up or the down arrow to increase or to decrease. If a station is weak or noisy, you may want to decrease the treble.

To adjust bass or treble to the middle position, select BAS or TRE. Then press and hold the AUDIO button for more than two seconds until you hear a beep. B and a zero or T and a zero will appear on the display.

To adjust both tone controls and both speaker controls to the middle position, first end out of audio mode by pressing another button, causing the radio to perform that function, or by waiting five seconds for the display to return to the time of day. Then press and hold the AUDIO button for more than two seconds until you hear a beep. CEN will appear on the display.

## Adjusting the Speakers (Balance/Fade)

**AUDIO:** To adjust the balance between the right and the left speakers, press and release the AUDIO button until BAL appears on the display. Then press and hold the up or the down arrow to move the sound toward the right or the left speakers.

To adjust the fade between the front and the rear speakers, press and release the AUDIO button until FAD appears on the display. Then press and hold the up or the down arrow to move the sound toward the front or the rear speakers.

To adjust balance or fade to the middle position, select BAL or FAD. Then press and hold AUDIO for more than two seconds until you hear a beep. L and a zero or F and a zero will appear on the display.



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To adjust both tone controls and both speaker controls to the middle position, first end out of audio mode by pressing another button, causing the radio to perform that function, or by waiting five seconds for the display to return to the time of day. Then press and hold AUDIO for more than two seconds until you hear a beep. CEN will appear on the display.

## Radio Messages

**CAL (Calibration):** Your audio system has been calibrated for your vehicle from the factory. If CAL appears on the display it means that your radio has not been configured properly for your vehicle and must be returned to the dealer for service.

## Playing a CD

With the ignition on, insert a CD partway into the slot, label side up. The player will pull it in and the CD should begin playing. CD will appear on the display. If you want to insert a CD with the ignition off, first press the eject button or the RCL knob.

If you turn off the ignition or radio with a CD in the player, it will stay in the player. When you turn on the ignition or the radio, the CD will start playing where it stopped, if it was the last selected audio source.

As each new track starts to play, the track number will appear on the display.

The CD player can play the smaller 8 cm single CDs with an adapter ring. Full-size CDs and the smaller CDs are loaded in the same manner.

If playing a CD-R the sound quality may be reduced due to CD-R quality, the method of recording, the quality of the music that has been recorded, and the way the CD-R has been handled. You may experience an increase in skipping, difficulty in finding tracks and/or difficulty in loading and ejecting. If these problems occur try a known good CD.

Do not add paper labels to CDs, they could get caught in the CD player.

Do not play 3 inch CDs without a standard adapter CD.

If an error appears on the display, see “CD Messages” later in this section.

**1 PREV (Previous):** Press this pushbutton to go to the previous track if the current track has been playing for less than eight seconds. If pressed when the current track has been playing for more than eight seconds, it will go to the beginning of the current track. The track number will appear on the display. If you hold the pushbutton or press it more than once, the player will continue moving back through the CD.

**2 NEXT:** Press this pushbutton to go to the next track. The track number will appear on the display. If you hold the pushbutton or press it more than once, the player will continue moving forward through the CD.

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**3 REV (Reverse):** Press and hold this pushbutton to reverse quickly within a track. Release it to play the passage. The display will show the elapsed time of the track.

**4 FWD (Forward):** Press and hold this pushbutton to advance quickly within a track. Release it to play the passage. The display will show the elapsed time of the track.

**5 RDM (Random):** Press this pushbutton to hear the tracks in random, rather than sequential, order. RND will appear on the display. Press RDM again to turn off random play. OFF will appear on the display.

**6 RPT (Repeat):** Press this pushbutton once to hear a track over again. RPT will appear on the display. The current track will continue to repeat. Press RPT again to turn off repeat play. OFF will appear on the display.

◁ **SEEK** ▷ **:** Press the right or the left arrow to go to the next or to the previous track. The track number will appear on the display.

**RCL (Recall):** Press this knob to see the current track number or how long the current track has been playing.

**AM FM:** Press this button to listen to the radio when a CD is playing. The inactive CD will remain safely inside the radio for future listening.

**CD:** Press this button to play a CD when listening to the radio. CD will appear on the display.

⏏ **(Eject):** Press this button to eject a CD. Eject may be activated with either the ignition or radio off. CDs may be loaded with the radio and ignition off if this button is pressed first.

## CD Messages

If the CD comes out, it could be for one of the following reasons:

- It is very hot. When the temperature returns to normal, the CD should play.
- You are driving on a very rough road. When the road becomes smoother, the CD should play.
- The CD is dirty, scratched, wet, or upside down.
- The air is very humid. If so, wait about an hour and try again.
- There may have been a problem while burning the CD.
- The label may be caught in the CD player.

If the CD is not playing correctly, for any other reason, try a known good CD.

If any error occurs repeatedly or if an error cannot be corrected, contact your dealer.



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## Radio with CD (Up Level)




## Radio Data System (RDS)

Your audio system is equipped with a Radio Data System (RDS). RDS features are available for use only on FM stations that broadcast RDS information.

With RDS, your radio can do the following:

- Seek to stations broadcasting the selected type of programming
- Receive announcements concerning local and national emergencies
- Display messages from radio stations
- Seek to stations with traffic announcements

This system relies upon receiving specific information from these stations and will only work when the information is available. In rare cases, a radio station may broadcast incorrect information that will cause the radio features to work improperly. If this happens, contact the radio station.

While you are tuned to an RDS station, the station name or the call letters will appear on the display instead of the frequency. RDS stations may also provide the time of day, a program type (PTY) for current programming, and the name of the program being broadcast.

## XM™ Satellite Radio Service (48 Contiguous US States)

XM™ is a continental U.S. based satellite radio service that offers 100 coast to coast channels including music, news, sports, talk, and children's programming. XM™ provides digital quality audio and text information, including song title and artist name. A service fee is required in order to receive the XM™ service. For more information, contact XM™ at www.xmradio.com or call 1-800-852-XMXM (9696).

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## Playing the Radio

**PWR (Power):** Press this knob to turn the system on and off.

**VOL (Volume):** Turn this knob to increase or to decrease volume.

**AUTO VOL (Automatic Volume):** With automatic volume, your audio system adjusts automatically to make up for road and wind noise as you drive.

Set the volume at the desired level. Press this button to select LOW, MEDIUM, or HIGH. AVOL will appear on the display. Each higher setting will allow for more volume compensation at faster vehicle speeds. Then as you drive, automatic volume increases the volume, as necessary, to overcome noise at any speed. The volume level should always sound the same to you as you drive. NONE will appear on the display if the radio cannot determine the vehicle speed. If you don't want to use automatic volume, select OFF.

**DISPL (Display):** Press this knob to switch the display between the radio station frequency and the time. Time display is available with the ignition turned off.

For RDS, press the DISPL knob to change what appears on the display while using RDS. The display options are station name, RDS station frequency, PTY, and the name of the program (if available).

For XM™ (48 contiguous US states, if equipped), press the DISPL knob while in XM mode to retrieve four different categories of related to the current song or channel: Artist, Song Title, Category or PTY, Channel Number/Channel Name.

To change the default on the display, press the DISPL knob until you see the display you want, then hold this knob for two seconds. The radio will produce one beep and the selected display will now be the default.

## Finding a Station

**BAND:** Press this button to switch between FM1, FM2, AM, or XM1 or XM2 (48 contiguous US states, if equipped). The display will show your selection.

**TUNE:** Turn this knob to select radio stations.

◀ **SEEK** ▶ **:** Press the right or the left arrow to go to the next or to the previous station and stay there.

The radio will seek only to stations that are in the selected band and only to those with a strong signal.



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◀ **PSCAN (Preset Scan)** ▶ **:** Press and hold either arrow for more than two seconds. SCAN will appear on the display and the radio will produce one beep. The radio will go to the first preset station stored on the pushbuttons, play for a few seconds, then go on to the next preset station. Press either arrow again or one of the pushbuttons to stop scanning presets.

The radio will scan only to stations that are in the selected band and only to those with a strong signal.

## Setting Preset Stations

The six numbered pushbuttons let you return to your favorite stations. You can set up to 30 stations (six FM1, six FM2 and six AM, six XM1 and six XM2 (48 contiguous US states, if equipped), by performing the following steps:

1. Turn the radio on.
2. Press BAND to select FM1, FM2, AM, or XM1 or XM2.
3. Tune in the desired station.
4. Press AUTO TONE to select the equalization.
5. Press and hold one of the six numbered pushbuttons until you hear a beep. Whenever you press that numbered pushbutton, the station you set will return and the equalization that you selected will be automatically stored for that pushbutton.
6. Repeat the steps for each pushbutton.

## Setting the Tone (Bass/Treble)

**AUDIO:** Push and release the AUDIO knob until BASS or TREB appears on the display. Turn the knob to increase or to decrease. The display will show the bass or the treble level. If a station is weak or noisy, you may want to decrease the treble.

To adjust the bass and the treble to the middle position, push and hold the AUDIO knob. The radio will produce one beep.

To adjust all tone and speaker controls to the middle position, push and hold the AUDIO knob when no tone or speaker control is displayed. ALL will appear on the display and you will hear a beep.

**AUTO TONE (Automatic Tone):** Press this button to select customized equalization settings designed for country/western, jazz, talk, pop, rock, and classical.

To return the bass and treble to the manual mode, push and release the AUDIO knob until MANUAL is displayed.

## Adjusting the Speakers (Balance/Fade)

**AUDIO:** To adjust the balance between the right and the left speakers, push and release the AUDIO knob until BAL appears on the display. Turn the knob to move the sound toward the right or the left speakers.

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To adjust the fade between the front and the rear speakers, push and release the AUDIO knob until FADE appears on the display. Turn the knob to move the sound toward the front or the rear speakers.

To adjust the balance and the fade to the middle position, push the AUDIO knob, then push it again and hold it until you hear one beep.

To adjust all tone and speaker controls to the middle position, push and hold the AUDIO knob when no tone or speaker control is displayed. ALL will appear on the display and you will hear a beep.

## Finding a Program Type (PTY) Station (RDS and XM™)

To select and find a desired PTY perform the following:

1. Press the P-TYPE knob to activate program type select mode. TYPE and a PTY will appear on the display.
2. Turn the P-TYPE knob to select a PTY.
3. Once the desired PTY is displayed, press the SEEK TYPE button to take you to the PTY's first station.
4. If you want to go to another station within that PTY and the PTY is displayed, press the SEEK TYPE button once. If the PTY is not displayed, press the SEEK TYPE button twice to display the PTY and then to go to another station.
5. Press P-TYPE to exit program type select mode. If PTY times out and is no longer on the display, go back to Step 1.

If both PTY and TRAF are on, the radio will search for stations with the selected PTY and traffic announcements.

If the radio cannot find the desired program type, NONE will appear on the display and the radio will return to the last station you were listening to.

**BAND (Alternate Frequency):** Alternate frequency allows the radio to switch to a stronger station with the same program type. To turn alternate frequency on, press and hold BAND for two seconds. AF ON will appear on the display. The radio may switch to stronger stations.

To turn alternate frequency off, press and hold BAND again for two seconds. AF OFF will appear on the display. The radio will not switch to other stations.

This function does not apply for XM™ Satellite Radio Service.

## RDS Messages

**ALERT!:** Alert warns of local or national emergencies. When an alert announcement comes on the current radio station, ALERT! will appear on the display. You will hear the announcement, even if the volume is muted or a CD is playing. If a CD is playing, play will stop during the announcement. You will not be able to turn off alert announcements.



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ALERT! will not be affected by tests of the emergency broadcast system. This feature is not supported by all RDS stations.

**INFO (Information):** If the current station has a message, the information symbol will appear on the display. Press this button to see the message. The message may display the artist, song title, call in phone numbers, etc.

If the whole message is not displayed, parts of the message will appear every three seconds. To scroll through the message at your own speed, press the INFO button repeatedly. A new group of words will appear on the display with each press. Once the complete message has been displayed, the information symbol will disappear from the display until another new message is received. The old message can be displayed by pressing the INFO button. You can view an old message until a new message is received or a different station is tuned to.

When a message is not available from a station, NO INFO will appear on the display.

**TRAF (Traffic):** If TRAF appears on the display, the tuned station broadcasts traffic announcements and when a traffic announcement comes on the tuned radio station you will hear it.

If the current tuned station does not broadcast traffic announcements, press this button and the radio will seek to a station that does. When the radio finds a station that broadcasts traffic announcements, it will stop and TRAF will be displayed. When a traffic announcement comes on the tuned radio station you will hear it. If no station is found, NO TRAF will appear on the display.

If TRAF is on the display you can press the TRAF button to turn of the traffic announcements.

Your radio will play the traffic announcement even if the volume is muted or interrupt the play of a CD if the last tuned station broadcasts traffic announcements.

This function does not apply for XM™ Satellite Radio Service.

## Radio Messages

**CAL ERR (Calibration Error):** Your audio system has been calibrated for your vehicle form the factory. If CAL ERR appears on the display it means that your radio has not been configure properly for your vehicle and it must be returned to the dealer for service.

**LOCKED:** This message is displayed when the THEFTLOCK® system has locked up. You must return to the dealer for service.

If any error occurs repeatedly or if an error cannot be corrected, contact your dealer.

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## XM™ Radio Messages

| Radio Display Message | Condition | Action Required |
|---|---|---|
| XL (Explicit Language Channels) | XL on the radio display, after the channel name, indicates content with explicit language. | These channels, or any others, can be blocked at a customer's request, by calling 1-800-852-XMXM (9696). |
| Updating | Updating encryption code | The encryption code in your receiver is being updated, and no action is required. This process should take no longer than 30 seconds. |
| No Signl | Loss of signal | Your system is functioning correctly, but you are in a location that is blocking the XM signal. When you move into an open area, the signal should return. |
| Loading | Acquiring channel audio (after 4 second delay) | Your radio system is acquiring and processing audio and text data. No action is needed. This message should disappear shortly. |
| Off Air | Channel not in service | This channel is not currently in service. Tune to another channel. |
| CH Unavl | Channel no longer available | This previously assigned channel is no longer assigned. Tune to another station. If this station was one of your presets, you may need to choose another station for that preset button. |
| No Info | Artist Name/Feature not available | No artist information is available at this time on this channel. Your system is working properly. |



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## XM™ Radio Messages (cont'd)

| Radio Display Message | Condition | Action Required |
|---|---|---|
| No Info | Song/Program Title not available | No song title information is available at this time on this channel. Your system is working properly. |
| No Info | Category Name not available | No category information is available at this time on this channel. Your system is working properly. |
| No Info | No Text/Informational message available | No text or informational messages are available at this time on this channel. Your system is working properly. |
| Not Found | No channel available for the chosen category | There are no channels available for the category you selected. Your system is working properly. |
| XM Lock | Theft lock active | The XM receiver in your vehicle may have previously been in another vehicle. For security purposes, XM receivers cannot be swapped between vehicles. If you receive this message after having your vehicle serviced, check with the servicing facility. |
| Radio ID | Radio ID label (channel 0) | If you tune to channel 0, you will see this message alternating with your XM Radio 8 digit radio ID label. This label is needed to activate your service. |
| Unknown | Radio ID not known (should only be if hardware failure) | If you receive this message when you tune to channel 0, you may have a receiver fault. Consult with your dealer. |
| Check XM | Hardware failure | If this message does not clear within a short period of time, your receiver may have a fault. Consult with your retail location. |

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## Playing a CD

With the ignition on, insert a CD partway into the slot, label side up. The player will pull it in, and the CD should begin playing The CD symbol will appear on the display. If you want to insert a CD with the ignition off, first press the EJT button or the DISPL knob.

If you turn off the ignition or radio with a CD in the player it will stay in the player. When you turn on the ignition or radio, the CD will start to play where it stopped, if it was the last selected audio source.

As each new track starts to play, the track number will appear on the display.

The CD player can play the smaller 8cm single CDs with an adapter ring. Full-size CDs and the smaller CDs are loaded in the same manner.

If playing a CD-R the sound quality may be reduced due to CD-R quality, the method of recording, the quality of the music that has been recorded, and the way the CD-R has been handled. You may experience an increase in skipping, difficulty in finding tracks and/or difficulty in loading and ejecting. If these problems occur try a known good CD.

Do not add paper labels to CDs, they could get caught in the CD player.

Do not play 3 inch CDs without a standard adapter CD.

If an error appears on the display, see “CD Messages” later in this section.

**1 PREV (Previous):** Press this pushbutton to go to the start of the current track if more than eight seconds have played. TRACK and the track number will appear on the display. If you hold this pushbutton or press it more than once, the player will continue moving backward through the CD.

**2 NEXT:** Press this pushbutton to go to the next track. TRACK and the track number will appear on the display. If you hold this pushbutton or press it more than once, the player will continue moving forward through the CD.

**3 REV (Reverse):** Press and hold this pushbutton to reverse quickly within a track. Once you get to the beginning of the track the track will begin to play. Press and hold this pushbutton for less than two seconds to reverse at ten times the normal playing speed. Press and hold it for more than two seconds to reverse at 20 times the normal playing speed. Release the pushbutton to play the track. The display will show REV and the elapsed time of the track.

**4 FWD (Forward):** Press and hold this pushbutton to advance quickly within a track. Press and hold this pushbutton for less than two seconds to advance at six times the normal playing speed. Press and hold it for more than two seconds to advance at 17 times the normal playing speed. Release the pushbutton to play the track. The display will show ET and the elapsed time of the track.



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**6 RDM (Random):** Press this pushbutton to hear the tracks in random, rather than sequential, order. RDM ON will appear on the display. RDM T and the track number will appear on the display when each track starts to play. Press RDM again to turn off random play. RDM OFF will appear on the display.

◁ **SEEK** ▷ **:** Press the left arrow to go to the start of the current or of the previous track. Press the right arrow to go to the start of the next track. If you hold either arrow or press it more than once, the player will continue moving backward or forward through the CD.

**DISPL (Display):** Press this knob to see how long the current track has been playing. ET and the elapsed time of the track will appear on the display. To change the default on the display (track or elapsed time), press this knob until you see the display you want, then hold the knob for two seconds. The radio will produce one beep and the selected display will now be the default.

**BAND:** Press this button to listen to the radio when a CD is playing. The inactive CD will remain safely inside the radio for future listening.

**CD AUX (Auxiliary):** Press this button to play a CD when listening to the radio. The CD symbol will appear on the display when a CD is loaded.

⏏ **EJT (Eject):** Press this button to eject a CD. Eject may be activated with either the ignition or radio off. CDs may be loaded with the ignition and radio off if this button is pressed first.

## CD Messages

If the CD comes out, it could be for one of the following reasons:

- It is very hot. When the temperature returns to normal, the CD should play.
- You are driving on a very rough road. When the road becomes smooth, the CD should play.
- The CD is dirty, scratched, wet, or upside down.
- The air is very humid. If so, wait about an hour and try again.
- There may have been a problem while burning the CD.
- The label may be caught in the CD player.

If the CD is not playing correctly, for any other reason, try a known good CD.

If any error occurs repeatedly or if an error cannot be corrected, contact your dealer. If your radio displays an error message, write it down and provide it to your dealer when reporting the problem.

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## Radio with CD (MP3)




## Radio Data System (RDS)

Your audio system is equipped with a Radio Data System (RDS). RDS features are available for use only on FM stations that broadcast RDS information.

With RDS, your radio can do the following:

- Seek to stations broadcasting the selected type of programming
- Receive announcements concerning local and national emergencies
- Display messages from radio stations
- Seek to stations with traffic announcements

This system relies upon receiving specific information from these stations and will only work when the information is available. In rare cases, a radio station may broadcast incorrect information that will cause the radio features to work improperly. If this happens, contact the radio station.

While you are tuned to an RDS station, the station name or the call letters will appear on the display instead of the frequency. RDS stations may also provide the time of day, a program type (PTY) for current programming, and the name of the program being broadcast.

## XM™ Satellite Radio Service (48 Contiguous US States)

XM™ is a continental U.S. based satellite radio service that offers 100 coast to coast channels including music, news, sports, talk, and children's programming. XM™ provides digital quality audio and text information, including song title and artist name. A service fee is required in order to receive the XM™ service. For more information, contact XM™ at www.xmradio.com or call 1-800-852-XMXM (9696).



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DEALER E-PROCESS

## Playing the Radio

**PWR (Power):** Press this knob to turn the system on and off.

**VOL (Volume):** Turn this knob to increase or to decrease volume.

**AUTO VOL (Automatic Volume):** With automatic volume, your audio system adjusts automatically to make up for road and wind noise as you drive.

Set the volume at the desired level. Press this button to select LOW, MEDIUM, or HIGH. AVOL will appear on the display. Each higher setting will allow for more volume compensation at faster vehicle speeds. Then as you drive, automatic volume increases the volume, as necessary, to overcome noise at any speed. The volume level should always sound the same to you as you drive. NONE will appear on the display if the radio cannot determine the vehicle speed. If you don't want to use automatic volume, select OFF.

**DISPL (Display):** Press this knob to switch the display between radio station frequency and time. Time display is available with the ignition turned off.

For RDS, press the DISPL knob to change what appears on the display while using RDS. The display options are station name, RDS station frequency, PTY, and the name of the program (if available).

For XM™ (48 contiguous US states, if equipped), press the DISPL knob while in XM™ mode to retrieve four different categories of information related to the current song or channel: Artist, Song Title, Category or PTY, Channel Number/Channel Name.

To change the default on the display, press the DISPL knob until you see the display you want, then hold this knob for two seconds. The radio will produce one beep and the selected display will now be the default.

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DEALER E-PROCESS

## Finding a Station

**BAND:** Press this button to switch between FM1, FM2, AM, or XM1 or XM2 (48 contiguous US states, if equipped). The display will show your selection.

**TUNE:** Turn this knob to select radio stations.

◀ **SEEK** ▶ **:** Press the right or the left arrow to go to the next or to the previous station and stay there.

The radio will seek only to stations that are in the selected band and only to those with a strong signal.

◀ **PSCAN (Preset Scan)** ▶ **:** Press and hold either arrow for more than two seconds. SCAN will appear on the display and the radio will produce one beep. The radio will scan to the first preset station stored on the pushbuttons, play for a few seconds, then go on to the next preset station. Press either arrow again or one of the pushbuttons to stop scanning presets.

The radio will scan only to the preset stations that are in the selected band and only to those with a strong signal.

## Setting Preset Stations

The six numbered pushbuttons let you return to your favorite stations. You can set up to 30 stations (six FM1, six FM2, and six AM, six XM1 and six XM2 (48 contiguous US states, if equipped), by performing the following steps:

1. Turn the radio on.
2. Press BAND to select FM1, FM2, AM, or XM1 or XM2.
3. Tune in the desired station.
4. Press AUTO TONE to select the equalization.
5. Press and hold one of the six numbered pushbuttons until you hear a beep. Whenever you press that numbered pushbutton, the station you set will return and the equalization that you selected will be automatically stored for that pushbutton.
6. Repeat the steps for each pushbutton.



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## Setting the Tone (Bass/Treble)

**AUDIO:** Push and release the AUDIO knob until BASS or TREB appears on the display. Turn the knob to increase or to decrease. The display will show the bass or the treble level. If a station is weak or noisy, you may want to decrease the treble.

To adjust the bass and the treble to the middle position, push and hold the AUDIO knob. The radio will produce one beep.

To adjust all tone and speaker controls to the middle position, push and hold the AUDIO knob when no tone or speaker control is displayed. ALL will appear on the display and you will hear a beep.

**AUTO TONE (Automatic Tone):** Press this button to select customized equalization settings designed for country/western, jazz, talk, pop, rock, and classical.

To return the bass and treble to the manual mode, push and release the AUDIO knob until MANUAL appears on the display.

## Adjusting the Speakers (Balance/Fade)

**AUDIO:** To adjust the balance between the right and the left speakers, push and release the AUDIO knob until BAL appears on the display. Turn the knob to move the sound toward the right or the left speakers.

To adjust the fade between the front and the rear speakers, push and release the AUDIO knob until FADE appears on the display. Turn the knob to move the sound toward the front or the rear speakers.

To adjust the balance and the fade to the middle position, push the AUDIO knob, then push it again and hold it until you hear one beep.

To adjust all tone and speaker controls to the middle position, push and hold the AUDIO knob when no tone or speaker control is displayed. ALL will appear on the display and you will hear a beep.

## Finding a Program Type (PTY) Station (RDS and XM™)

To select and find a desired PTY perform the following:

1. Press the P-TYPE knob to activate program type select mode. TYPE and a PTY will appear on the display.
2. Turn the P-TYPE knob to select a PTY.

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3. Once the desired PTY is displayed, press the SEEK TYPE button to take you to the PTY's first station.
4. If you want to go to another station within that PTY and the PTY is displayed, press the SEEK TYPE button once. If the PTY is not displayed, press the SEEK TYPE button twice to display the PTY and then to go to another station.
5. Press P-TYPE to exit program type select mode.

   IF PTY times out and is no longer on the display, go back to Step 1.

If both PTY and TRAF are on, the radio will search for stations with the selected PTY and traffic announcements.

If the radio cannot find the desired program type, NONE will appear on the display and the radio will return to the last station you were listening to.

**BAND (Alternate Frequency):** Alternate frequency allows the radio to switch to a stronger station with the same program type. To turn alternate frequency on, press and hold BAND for two seconds. AF ON will appear on the display. The radio may switch to stronger stations.

To turn alternate frequency off, press and hold BAND again for two seconds. AF OFF will appear on the display. The radio will not switch to other stations.

This function does not apply for XM™ Satellite Radio Service.

## RDS Messages

**ALERT!:** Alert warns of local or national emergencies. When an alert announcement comes on the current radio station, ALERT! will appear on the display. You will hear the announcement, even if the volume is muted or a CD is playing. If a CD is playing, play will stop during the announcement. You will not be able to turn off alert announcements.

ALERT! will not be affected by tests of the emergency broadcast system. This feature is not supported by all RDS stations.

**INFO (Information):** If the current station has a message, the information symbol will appear on the display. Press this button to see the message. The message may display the artist, song title, call in phone numbers, etc.



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If the whole message is not displayed, parts of the message will appear every three seconds. To scroll through the message at your own speed, press the INFO button repeatedly. A new group of words will appear on the display with each press. Once the complete message has been displayed, the information symbol will disappear from the display until another new message is received. The old message can be displayed by pressing the INFO button. You can view an old message until a new message is received or a different station is tuned to.

When a message is not available from a station, NO INFO will appear on the display.

**TRAF (Traffic):** If TRAF appears on the display, the tuned station broadcasts traffic announcements and when a traffic announcement comes on the tuned radio station you will hear it.

If the current tuned station does not broadcast traffic announcements, press the TRAF button and the radio will seek to a station that does. When the radio finds a station that broadcasts traffic announcements, the radio will stop and TRAF will be displayed. When a traffic announcement comes on the tuned radio station you will hear it. If no station is found, NO TRAF will appear on the display.

If TRAF is on the display you can press the TRAF button to turn of the traffic announcements.

Your radio will play the traffic announcement if the volume is low. Your radio will interrupt the play of a CD if the last tuned station broadcasts traffic announcements.

This function does not apply to XM™ Satellite Radio Service.

## Radio Messages

**CAL ERR (Calibration Error):** Your audio system has been calibrated for your vehicle from the factory. If CAL ERR appears on the display it means that your radio has not been configured properly for your vehicle and it must be returned to the dealer for service.

**LOCKED:** This message is displayed when the THEFTLOCK® system has locked up. You must return to the dealer for service.

If any error occurs repeatedly or if an error cannot be corrected, contact your dealer.

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## XM™ Radio Messages

| Radio Display Message | Condition | Action Required |
|---|---|---|
| XL (Explicit Language Channels) | XL on the radio display, after the channel name, indicates content with explicit language. | These channels, or any others, can be blocked at a customer's request, by calling 1-800-852-XMXM (9696). |
| Updating | Updating encryption code | The encryption code in your receiver is being updated, and no action is required. This process should take no longer than 30 seconds. |
| No Signl | Loss of signal | Your system is functioning correctly, but you are in a location that is blocking the XM signal. When you move into an open area, the signal should return. |
| Loading | Acquiring channel audio (after 4 second delay) | Your radio system is acquiring and processing audio and text data. No action is needed. This message should disappear shortly. |
| Off Air | Channel not in service | This channel is not currently in service. Tune to another channel. |
| CH Unavl | Channel no longer available | This previously assigned channel is no longer assigned. Tune to another station. If this station was one of your presets, you may need to choose another station for that preset button. |
| No Info | Artist Name/Feature not available | No artist information is available at this time on this channel. Your system is working properly. |



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## XM™ Radio Messages (cont'd)

| Radio Display Message | Condition | Action Required |
|---|---|---|
| No Info | Song/Program Title not available | No song title information is available at this time on this channel. Your system is working properly. |
| No Info | Category Name not available | No category information is available at this time on this channel. Your system is working properly. |
| No Info | No Text/Informational message available | No text or informational messages are available at this time on this channel. Your system is working properly. |
| Not Found | No channel available for the chosen category | There are no channels available for the category you selected. Your system is working properly. |
| XM Lock | Theft lock active | The XM receiver in your vehicle may have previously been in another vehicle. For security purposes, XM receivers cannot be swapped between vehicles. If you receive this message after having your vehicle serviced, check with the servicing facility. |
| Radio ID | Radio ID label (channel 0) | If you tune to channel 0, you will see this message alternating with your XM Radio 8 digit radio ID label. This label is needed to activate your service. |
| Unknown | Radio ID not known (should only be if hardware failure) | If you receive this message when you tune to channel 0, you may have a receiver fault. Consult with your dealer. |
| Check XM | Hardware failure | If this message does not clear within a short period of time, your receiver may have a fault. Consult with your retail location. |

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## Playing a CD

With the ignition on, insert a CD partway into the slot, label side up. The player will pull it in, and READING will appear on the display. The CD should begin playing and the CD symbol will appear on the display. If you want to insert a CD with the ignition off, first press the EJT button or the DISPL knob.

If you turn off the ignition or radio with a CD in the player it will stay in the player. When you turn on the ignition or radio, the CD will start to play where it stopped, if it was the last selected audio source.

As each new track starts to play, the track number will appear on the display.

The CD player can play the smaller 8cm single CDs with an adapter ring. Full-size CDs and the smaller CDs are loaded in the same manner.

If playing a CD-R the sound quality may be reduced due to CD-R quality, the method of recording, the quality of the music that has been recorded, and the way the CD-R has been handled. You may experience an increase in skipping, difficulty in finding tracks and/or difficulty in loading and ejecting. If these problems occur try a known good CD.

Do not add paper labels to CDs, they could get caught in the CD player.

Do not play 3 inch CDs without a standard adapter CD.

If an error appears on the display, see “CD Messages” later in this section.

**1 FLD▽ (Previous):** Press this pushbutton to go to the start of the current track if more than eight seconds have played. TRACK and the track number will appear on the display. If you hold this pushbutton or press it more than once, the player will continue moving backward through the CD.

**2 FLD△ (Next):** Press this pushbutton to go to the next track. TRACK and the track number will appear on the display. If you hold this pushbutton or press it more than once, the player will continue moving forward through the CD.

**3 REV (Reverse):** Press and hold this pushbutton to reverse quickly within a track. Press and hold this pushbutton for less than two seconds to reverse at 10 times the normal playing speed. Press and hold it for more than two seconds to reverse at 20 times the normal playing speed. Release the pushbutton to play the track. The display will show REV and the elapsed time of the track.



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**4 FWD (Forward):** Press and hold this pushbutton to advance quickly within a track. Press and hold this pushbutton for less than two seconds to advance at six times the normal playing speed. Press and hold it for more than two seconds to advance at 17 times the normal playing speed. Release the pushbutton to play the track. The display will show ET and the elapsed time of the track.

**6 RDM (Random):** Press this pushbutton to hear the tracks in random, rather than sequential, order. RDM ON will appear on the display. RDM T and the track number will appear on the display when each track starts to play. Press RDM again to turn off random play. RDM OFF will appear on the display.

◁ **SEEK** ▷ **:** Press the left arrow to go to the start of the previous track. Press the right arrow to go to the start of the next track. Pressing either arrow for more than two seconds will search the previous or next tracks at two tracks per second. When you see the track number that you would like to play, release the button to stop searching and to play the track.

**TUNE:** Turning the TUNE knob will fast track reverse or advance through tracks. The track number will appear on the display for each track.

**DISPL (Display):** Press this knob to see how long the current track has been playing. ET and the elapsed time of the track will appear on the display. To change the default on the display (track or elapsed time), press this knob until you see the display you want, then hold the knob for two seconds. The radio will produce one beep and the selected display will now be the default.

**BAND:** Press this button to listen to the radio when a CD is playing. The inactive CD will remain safely inside the radio for future listening.

**CD AUX (Auxiliary):** Press this button to play a CD when listening to the radio. The CD symbol will appear on the display when a CD is loaded.

⏏ **EJT (Eject):** Press this button to eject a CD. Eject may be activated with either the ignition or radio off. CDs may be loaded with the ignition and radio off if this button is pressed first.

## Using an MP3 CD

### MP3 Format

This MP3 player will accept MP3 files that were recorded on an up to 700 MB CD-R CD. The files can be recorded with the following fixed bit rates: 32 kbps, 40 kpbs, 56 kpbs, 64 kpbs, 80 kpbs, 96 kpbs, 112 kpbs, 128 kpbs, 160 kpbs, 192 kpbs, 224 kpbs, 256 kpbs, and 320 kpbs or a variable bit rate. Song title, artist name, and album will be available when recorded using ID3 tags versions 1 and 2.

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The player will be able to read and play a maximum of 50 folders, 50 playlists, 10 sessions, and 255 files. Long file, folder, or playlist names or a combination of a large number of files and folders or playlists may cause the player to be unable to play up to the maximum number of files, folders, playlists, or sessions. If you wish to play large numbers of files, folders, playlists or sessions minimize the length of the file, folder or playlist name. You can also play an MP3 CD that was recorded using no file folders. The system can support up to 11 folders in depth, though, keep the depth of the folders to a minimum in order to keep down the complexity and confusion in trying to locate a particular folder during playback. If a CD contains more than the maximum of 50 folders, 50 playlists, 10 sessions, and 255 files the player will let you access and navigate up to the maximum, but all items over the maximum will be ignored.

## Root Directory

The root directory will be treated as a folder. If the root directory has compressed audio files, the directory will be displayed as F1 ROOT. All files contained directly under the root directory will be accessed prior to any root directory folders. However, playlists (Px) will always be accessed before root folders or files.

## Empty Directory or Folder

If a root directory or a folder exists somewhere in the file structure that contains only folders/subfolders and no compressed files directly beneath them, the player will advance to the next folder in the file structure that contains compressed audio files and the empty folder will not be displayed or numbered.

## No Folder

When the CD contains only compressed files, the files will be located under the root folder. The next and previous folder functions will have no function on a CD that was recorded without folders or playlists. When displaying the name of the folder the radio will display ROOT.

When the CD contains only playlists and compressed audio files, but no folders, all files will be located under the root folder. The folder down and the folder up buttons will search playlists (Px) first and then go to the root folder. When the radio displays the name of the folder the radio will display ROOT.



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## Order of Play

Tracks will be played in the following order:

- Play will begin from the first track in the first playlist and will continue sequentially through all tracks in each playlist. When the last track of the last playlist has been played, play will continue from the first track of the first playlist.
- If the CD does not contain any playlists, then play will begin from the first track under the root directory. When all tracks from the root directory have been played, play will continue from files according to their numerical listing. After playing the last track from the last folder, play will begin again at the first track of the first folder or root directory.

When play enters a new folder, the display will not automatically show the new folder name unless you have chosen the folder mode as the default display, see DISPL later in this section. The new track name will be displayed.

## File System and Naming

The song name that will be displayed will be the song name that is contained in the ID3 tag. If the song name is not present in the ID3 tag, then the radio will display the file name without the extension (such as.mp3) as the track name.

Track names longer than 32 characters or 4 pages will be shortened. The display will not show parts of words on the last page of text and the extension of the filename will not be displayed.

## Preprogrammed Playlists

You can access preprogrammed playlists which were created by WinAmp™, MusicMatch™, or Real Jukebox™ software, however, you will not have editing capability. These playlists will be treated as special folders containing compressed audio song files.

## Playing an MP3

With the ignition on, insert a CD partway into the slot, label side up. The player will pull it in, and READING will appear on the display. The CD should begin playing and the CD symbol will appear on the display. If you want to insert a CD with the ignition off, first press the EJT button or the DISPL knob.

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If you turn off the ignition or radio with a CD in the player it will stay in the player. When you turn on the ignition or radio, the CD will start to play where it stopped, if it was the last selected audio source.

As each new track starts to play, the track number will appear on the display.

The CD player can play the smaller 8cm single CDs with an adapter ring. Full-size CDs and the smaller CDs are loaded in the same manner.

If playing a CD-R the sound quality may be reduced due to CD-R quality, the method of recording, the quality of the music that has been recorded, and the way the CD-R has been handled. You may experience an increase in skipping, difficulty in finding tracks and/or difficulty in loading and ejecting. If these problems occur try a known good CD.

Do not add paper labels to CDs, they could get caught in the CD player.

Do not play 3 inch CDs without a standard adapter CD.

If an error appears on the display, see “CD Messages” later in this section.

**1 FLD▽ (Previous Folder):** Press this pushbutton to go to the first track in the previous folder. Pressing this button while in folder random mode will take you to the previous folder and random the tracks in that folder.

**2 FLD△ (Next Folder):** Press this pushbutton to go to the first track in the next folder. Pressing this button while in folder random mode will take you to the next folder and random the tracks in that folder.

**3 REV (Reverse):** Press and hold this pushbutton to reverse quickly within a track. Press and hold this pushbutton for less than two seconds to reverse at 10 times the normal playing speed. Press and hold it for more than two seconds to reverse at 20 times the normal playing speed. Release the pushbutton to play the track. The display will show REV and the elapsed time of the track.

**4 FWD (Forward):** Press and hold this pushbutton to advance quickly within a track. Press and hold this pushbutton for less than two seconds to advance at 10 times the normal playing speed. Press and hold it for more than two seconds to advance at 20 times the normal playing speed. Release the pushbutton to play the track. The display will show FWD and the elapsed time of the track.

**6 RDM (Random):** To repeat the tracks in the current folder or playlist, press and release this pushbutton. FLDR RDM will appear on the display. Once all of the tracks in the current folder or playlist have been played the system will move on to the next folder or playlist and play all of the tracks in random order.



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To random all the tracks on the CD, press and hold this pushbutton for two seconds. You will hear a beep and CD RDM will appear on the display. This feature will not work with playlists.

When in random, pressing and releasing either SEEK arrow will take you to the next or previous random track.

Press and release this pushbutton again to turn off random play. NO RDM will appear on the display.

◁ **SEEK** ▷ **:** Press the left arrow to go to the start of the previous track. Press the right arrow to go to the start of the next track. Pressing either arrow for more than two seconds will search the previous or next tracks at two tracks per second. When you see the track number that you would like to play, release the button to stop searching and to play the track.

**TUNE:** Turning the TUNE knob will fast track reverse or advance through the tracks in all folders. The track number and file name will appear on the display for each track. Turning this knob while in random will fast track reverse or advance the tracks in sequential order.

**DISPL (Display):** Press this knob to switch between track mode, folder/playlist mode, and time of day mode. The display will show only eight characters, but there can be up to four pages of text. If there are more than eight characters in the song, folder, or playlist name, pressing this knob within two seconds will take you to the next page of text. If there are no other pages to be shown, pressing this knob within two seconds will take you to the next display mode.

Track mode will display the current track number and the ID3 tag song name.

Folder/playlist mode will display the current folder or playlist number and the folder/playlist name.

Time of day mode will display the time of day and the ID3 tag song name.

To change the default on the display, press the DISPL knob until you see the display you want, then hold this knob for two seconds. The radio will produce one beep and the selected display will now be the default.

**INFO (Information):** INFO will appear on the display whenever a current track has ID3 tag information. Press this button to display the artist name and album contained in the tag. INFO will disappear from the display when the information in the ID3 tag has finished.

**BAND:** Press this button to listen to the radio when a CD is playing. The inactive CD will remain safely inside the radio for future listening.

**CD AUX (Auxiliary):** Press this button to play a CD when listening to the radio. The CD symbol will appear on the display when a CD is loaded.

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⏏ **EJT (Eject):** Press this button to eject a CD. Eject may be activated with either the ignition or radio off. CDs may be loaded with the ignition and radio off if this button is pressed first.

## CD Messages

**CHECK CD:** If this message appears on the display and the CD comes out, it could be for one of the following reasons:

- It is very hot. When the temperature returns to normal, the CD should play.
- You are driving on a very rough road. When the road becomes smooth, the CD should play.
- The CD is dirty, scratched, wet, or upside down.
- The air is very humid. If so, wait about an hour and try again.
- The format of the CD may not be compatible. See “MP3 Format” earlier in this section.
- There may have been a problem while burning the CD.
- The label may be caught in the CD player.

If the CD is not playing correctly, for any other reason, try a known good CD.

If any error occurs repeatedly or if an error cannot be corrected, contact your dealer. If the radio displays an error message, write it down and provide it to your dealer when reporting the problem.

## Personal Choice Radio Controls

This feature enables two drivers to store and recall personal settings for radio presets, last tuned station, volume, tone, radio, or CD.

The numbers (1 or 2), found on the back of the remote keyless entry transmitter, correspond to the drivers (1 or 2).

To recall audio sources, press the UNLOCK button on the remote keyless entry transmitter and turn the ignition on. The radio settings will automatically adjust to where they were last set by the identified driver (1 or 2).

To program this feature, do the following:

1. Press the UNLOCK button on the remote keyless entry transmitter for the identified driver (1 or 2).
2. Turn the ignition on.
3. Set all radio preferences. For more information see “Setting Preset Stations” and “Setting the Tone” listed for your particular radio.

Follow these steps each time you want to change the stored settings.

All vehicles are shipped with this feature on. This feature can be disabled by your dealer if desired.



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## Theft-Deterrent Feature (Non RDS Radios)

THEFTLOCK® is designed to discourage theft of your radio. The feature works automatically by learning a portion of the Vehicle Identification Number (VIN). If the radio is moved to a different vehicle, it will not operate and LOC will be displayed.

When the radio and vehicle are turned off, the blinking red light indicates that THEFTLOCK is armed.

With THEFTLOCK activated, your radio will not operate if stolen.

## Theft-Deterrent Feature (RDS Radios)

THEFTLOCK® is designed to discourage theft of your radio. The feature works automatically by learning a portion of the Vehicle Identification Number (VIN). If the radio is moved to a different vehicle, it will not operate and LOCKED will be displayed.

When the radio and vehicle are turned off and RAP is not active, the blinking red light indicates that THEFTLOCK is armed.

With THEFTLOCK activated, your radio will not operate if stolen.

## Understanding Radio Reception

### AM

The range for most AM stations is greater than for FM, especially at night. The longer range, however, can cause stations to interfere with each other. AM can pick up noise from things like storms and power lines. Try reducing the treble to reduce this noise.

### FM Stereo

FM stereo will give you the best sound, but FM signals will reach only about 10 to 40 miles (16 to 65 km). Tall buildings or hills can interfere with FM signals, causing the sound to come and go.

### XM™ Satellite Radio Service (48 Contiguous US States)

XM™ Satellite Radio gives you digital radio reception from coast to coast. Just as with FM, tall buildings or hills can interfere with satellite radio signals, causing the sound to come and go. Your radio may display NO SIGNAL to indicate interference.

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## Care of Your CDs

Handle CDs carefully. Store them in their original cases or other protective cases and away from direct sunlight and dust. If the surface of a CD is soiled, dampen a clean, soft cloth in a mild, neutral detergent solution and clean it, wiping from the center to the edge.

Be sure never to touch the side without writing when handling CDs. Pick up CDs by grasping the outer edges or the edge of the hole and the outer edge.

## Care of Your CD Player

The use of CD lens cleaners for CDs is not advised, due to the risk of contaminating the lens of the CD optics with lubricants internal to the CD mechanism.

## Fixed Mast Antenna

The fixed mast antenna can withstand most car washes without being damaged. If the mast should ever become slightly bent, you can straighten it out by hand. If the mast is badly bent, you should replace it.

Check occasionally to be sure the mast is still tightened to the fender. If tightening is required, tighten by hand, then with a wrench one quarter turn.

## XM™ Satellite Radio Antenna System (48 Contiguous US States)

Your XM™ Satellite Radio antenna is located on the roof of your vehicle. Keep this antenna clear of snow and ice build up for clear radio reception.

The performance of your XM system may be affected if your sunroof is open.

## Chime Level Adjustment

Chime level adjustment is only available on RDS radios. The radio is the vehicle chime producer. The chime is produced from the driver's side front door speakers. To change the volume level, press and hold pushbutton 6 with the ignition on and the radio power off. The chime volume level will change from the normal level to loud, and LOUD will be displayed on the radio. To change back to the default or normal setting, press and hold pushbutton 6 again. The chime level will change from the loud level to normal, and NORMAL will be displayed. Each time the chime volume is changed, three chimes will sound as an example of the new volume selected. Removing the radio and not replacing it with a factory radio or chime module will disable vehicle chimes.



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# Section 4 Driving Your Vehicle


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# Your Driving, the Road, and Your Vehicle

## Defensive Driving

The best advice anyone can give about driving is: Drive defensively.

Please start with a very important safety device in your vehicle: Buckle up. See *Safety Belts: They Are for Everyone on page 1-8*.

Defensive driving really means “be ready for anything.” On city streets, rural roads or freeways, it means “always expect the unexpected.”

Assume that pedestrians or other drivers are going to be careless and make mistakes. Anticipate what they might do. Be ready for their mistakes.

Rear-end collisions are about the most preventable of accidents. Yet they are common. Allow enough following distance. It is the best defensive driving maneuver, in both city and rural driving. You never know when the vehicle in front of you is going to brake or turn suddenly.

Defensive driving requires that a driver concentrate on the driving task. Anything that distracts from the driving task — such as concentrating on a cellular telephone call, reading, or reaching for something on the floor — makes proper defensive driving more difficult and can even cause a collision, with resulting injury. Ask a passenger to help do things like this, or pull off the road in a safe place to do them yourself. These simple defensive driving techniques could save your life.

## Drunken Driving

Death and injury associated with drinking and driving is a national tragedy. It is the number one contributor to the highway death toll, claiming thousands of victims every year.

Alcohol affects four things that anyone needs to drive a vehicle:

- Judgment
- Muscular Coordination
- Vision
- Attentiveness.

Police records show that almost half of all motor vehicle-related deaths involve alcohol. In most cases, these deaths are the result of someone who was drinking and driving. In recent years, more than 16,000 annual motor vehicle-related deaths have been associated with the use of alcohol, with more than 300,000 people injured.



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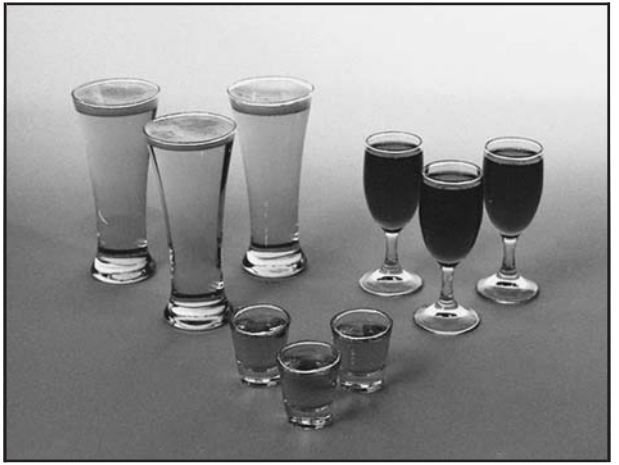
Many adults — by some estimates, nearly half the adult population — choose never to drink alcohol, so they never drive after drinking. For persons under 21, it is against the law in every U.S. state to drink alcohol. There are good medical, psychological and developmental reasons for these laws.

The obvious way to eliminate the leading highway safety problem is for people never to drink alcohol and then drive. But what if people do? How much is “too much” if someone plans to drive? It is a lot less than many might think. Although it depends on each person and situation, here is some general information on the problem.

The Blood Alcohol Concentration (BAC) of someone who is drinking depends upon four things:

- The amount of alcohol consumed
- The drinker’s body weight
- The amount of food that is consumed before and during drinking
- The length of time it has taken the drinker to consume the alcohol.

According to the American Medical Association, a 180 lb (82 kg) person who drinks three 12 ounce (355 ml) bottles of beer in an hour will end up with a BAC of about 0.06 percent. The person would reach the same BAC by drinking three 4 ounce (120 ml) glasses of wine or three mixed drinks if each had 1-1/2 ounces (45 ml) of liquors like whiskey, gin or vodka.



It is the amount of alcohol that counts. For example, if the same person drank three double martinis (3 ounces or 90 ml of liquor each) within an hour, the person’s BAC would be close to 0.12 percent. A person who consumes food just before or during drinking will have a somewhat lower BAC level.

There is a gender difference, too. Women generally have a lower relative percentage of body water than men. Since alcohol is carried in body water, this means that a woman generally will reach a higher BAC level than a man of her same body weight will when each has the same number of drinks.

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The law in an increasing number of U.S. states, and throughout Canada, sets the legal limit at 0.08 percent. In some other countries, the limit is even lower. For example, it is 0.05 percent in both France and Germany. The BAC limit for all commercial drivers in the United States is 0.04 percent.

The BAC will be over 0.10 percent after three to six drinks (in one hour). Of course, as we have seen, it depends on how much alcohol is in the drinks, and how quickly the person drinks them.

But the ability to drive is affected well below a BAC of 0.10 percent. Research shows that the driving skills of many people are impaired at a BAC approaching 0.05 percent, and that the effects are worse at night. All drivers are impaired at BAC levels above 0.05 percent. Statistics show that the chance of being in a collision increases sharply for drivers who have a BAC of 0.05 percent or above. A driver with a BAC level of 0.06 percent has doubled his or her chance of having a collision. At a BAC level of 0.10 percent, the chance of this driver having a collision is 12 times greater; at a level of 0.15 percent, the chance is 25 times greater!

The body takes about an hour to rid itself of the alcohol in one drink. No amount of coffee or number of cold showers will speed that up. “I will be careful” is not the right answer. What if there is an emergency, a need to take sudden action, as when a child darts into the street? A person with even a moderate BAC might not be able to react quickly enough to avoid the collision.

There is something else about drinking and driving that many people do not know. Medical research shows that alcohol in a person’s system can make crash injuries worse, especially injuries to the brain, spinal cord or heart. This means that when anyone who has been drinking — driver or passenger — is in a crash, that person’s chance of being killed or permanently disabled is higher than if the person had not been drinking.

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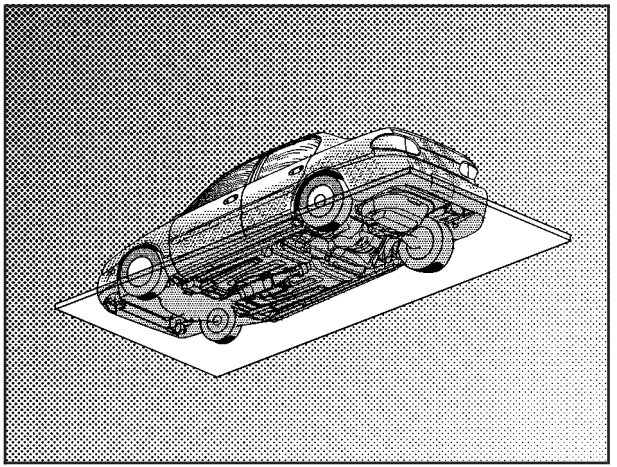
**Drinking and then driving is very dangerous. Your reflexes, perceptions, attentiveness and judgment can be affected by even a small amount of alcohol. You can have a serious — or even fatal — collision if you drive after drinking. Please do not drink and drive or ride with a driver who has been drinking. Ride home in a cab; or if you are with a group, designate a driver who will not drink.**



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## Control of a Vehicle

You have three systems that make your vehicle go where you want it to go. They are the brakes, the steering and the accelerator. All three systems have to do their work at the places where the tires meet the road.



Sometimes, as when you are driving on snow or ice, it is easy to ask more of those control systems than the tires and road can provide. That means you can lose control of your vehicle. Also see *Enhanced Traction System (ETS) on page 4-8*.

## Braking

Braking action involves *perception time* and *reaction time.*

First, you have to decide to push on the brake pedal. That is *perception time.* Then you have to bring up your foot and do it. That is *reaction time.*

Average *reaction time* is about 3/4 of a second. But that is only an average. It might be less with one driver and as long as two or three seconds or more with another. Age, physical condition, alertness, coordination and eyesight all play a part. So do alcohol, drugs and frustration. But even in 3/4 of a second, a vehicle moving at 60 mph (100 km/h) travels 66 feet (20 m). That could be a lot of distance in an emergency, so keeping enough space between your vehicle and others is important.

And, of course, actual stopping distances vary greatly with the surface of the road (whether it is pavement or gravel); the condition of the road (wet, dry, icy); tire tread; the condition of your brakes; the weight of the vehicle and the amount of brake force applied.

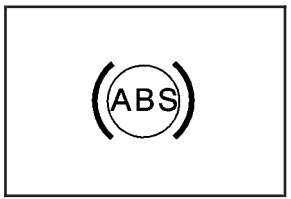
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Avoid needless heavy braking. Some people drive in spurts — heavy acceleration followed by heavy braking — rather than keeping pace with traffic. This is a mistake. Your brakes may not have time to cool between hard stops. Your brakes will wear out much faster if you do a lot of heavy braking. If you keep pace with the traffic and allow realistic following distances, you will eliminate a lot of unnecessary braking. That means better braking and longer brake life.

If your engine ever stops while you are driving, brake normally but do not pump your brakes. If you do, the pedal may get harder to push down. If your engine stops, you will still have some power brake assist. But you will use it when you brake. Once the power assist is used up, it may take longer to stop and the brake pedal will be harder to push.

## Anti-lock Brake System (ABS)

Your vehicle may have anti-lock brakes. ABS is an advanced electronic braking system that will help prevent a braking skid.




If your vehicle has anti-lock brakes, this warning light on the instrument panel will come on briefly when you start your vehicle.

When you start your engine, or when you begin to drive away, your anti-lock brake system will check itself. You may hear a momentary motor or clicking noise while this test is going on, and you may even notice that your brake pedal moves or pulses a little. This is normal.



Let us say the road is wet and you are driving safely. Suddenly, an animal jumps out in front of you. You slam on the brakes and continue braking. Here is what happens with ABS:



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A computer senses that wheels are slowing down. If one of the wheels is about to stop rolling, the computer will separately work the brakes at each wheel.

The anti-lock system can change the brake pressure faster than any driver could. The computer is programmed to make the most of available tire and road conditions. This can help you steer around the obstacle while braking hard.



As you brake, your computer keeps receiving updates on wheel speed and controls braking pressure accordingly.

Remember: Anti-lock does not change the time you need to get your foot up to the brake pedal or always decrease stopping distance. If you get too close to the vehicle in front of you, you will not have time to apply your brakes if that vehicle suddenly slows or stops. Always leave enough room up ahead to stop, even though you have anti-lock brakes.

### Using Anti-Lock

Do not pump the brakes. Just hold the brake pedal down firmly and let anti-lock work for you. You may feel a slight brake pedal pulsation or notice some noise, but this is normal.

## Braking in Emergencies

At some time, nearly every driver gets into a situation that requires hard braking.

If you have anti-lock, you can steer and brake at the same time. However, if you do not have anti-lock, your first reaction — to hit the brake pedal hard and hold it down — may be the wrong thing to do. Your wheels can stop rolling. Once they do, the vehicle can not respond to your steering. Momentum will carry it in whatever direction it was headed when the wheels stopped rolling. That could be off the road, into the very thing you were trying to avoid, or into traffic.

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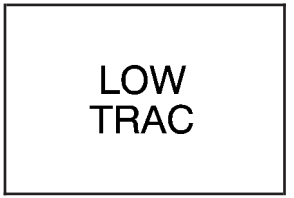
If you do not have anti-lock, use a “squeeze” braking technique. This will give you maximum braking while maintaining steering control. You can do this by pushing on the brake pedal with steadily increasing pressure.

In an emergency, you will probably want to squeeze the brakes hard without locking the wheels. If you hear or feel the wheels sliding, ease off the brake pedal. This will help you retain steering control. If you *do* have anti-lock, it is different. See “Anti-Lock Brake System” in this section.

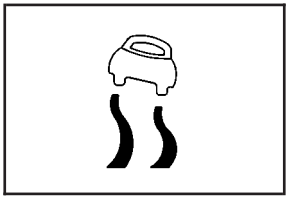
In many emergencies, steering can help you more than even the very best braking.

## Enhanced Traction System (ETS)

If your vehicle has the optional four-speed automatic transaxle and anti-lock brakes, it also has an Enhanced Traction System (ETS) that limits wheel spin. This is especially useful in slippery road conditions. The system operates only when the transaxle shift lever is in the REVERSE (R), THIRD (3) or AUTOMATIC OVERDRIVE (D) position and the system senses that one or both of the front wheels are spinning or beginning to lose traction. When this happens, the system reduces engine power and may also upshift the transaxle to limit wheel spin.



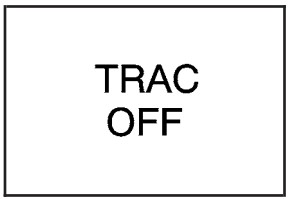

**United States**



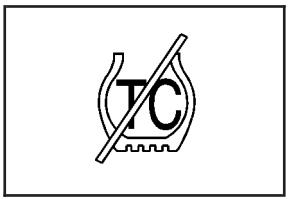
**Canada**

This light will come on when your Enhanced Traction System is limiting wheel spin. See *Enhanced Traction System Active Light on page 3-28*.

You may feel or hear the system working, but this is normal.




**United States**




**Canada**

When the transaxle shift lever is in any position other than FIRST (1) or SECOND (2) and the parking brake is fully released, this warning light will come on to let you know if there’s a problem with the system.



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See *Enhanced Traction System Warning Light on page 3-27*. When this warning light is on, the system will not limit wheel spin. Adjust your driving accordingly.

The Enhanced Traction System can operate when the transaxle shift lever is in any position other than FIRST (1) or SECOND (2). To limit wheel spin, especially in slippery road conditions, you should use REVERSE (R), THIRD (3) or AUTOMATIC OVERDRIVE (D). See *Automatic Transaxle Operation on page 2-20*. If your vehicle ever gets stuck in sand, mud or snow and rocking the vehicle is required, see *If You Are Stuck: In Sand, Mud, Ice or Snow on page 4-28*.

When you move the shift lever to FIRST (1) or SECOND (2), the system will turn off. The Enhanced Traction System warning light will come on and stay on. If the Enhanced Traction System is limiting wheel spin when you move the shift lever to another position, the system won't turn off right away. It will wait until there's no longer a current need to limit wheel spin.

You can turn the system back on at any time by moving the shift lever to any position other than FIRST (1) or SECOND (2). The Enhanced Traction System warning light should go off.

# Steering

## Power Steering

If you lose power steering assist because the engine stops or the system is not functioning, you can steer but it will take much more effort.

## Steering Tips

### Driving on Curves

It is important to take curves at a reasonable speed.

A lot of the "driver lost control" accidents mentioned on the news happen on curves. Here is why:

Experienced driver or beginner, each of us is subject to the same laws of physics when driving on curves. The traction of the tires against the road surface makes it possible for the vehicle to change its path when you turn the front wheels. If there is no traction, inertia will keep the vehicle going in the same direction. If you have ever tried to steer a vehicle on wet ice, you will understand this.

The traction you can get in a curve depends on the condition of your tires and the road surface, the angle at which the curve is banked, and your speed. While you are in a curve, speed is the one factor you can control.

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Suppose you are steering through a sharp curve. Then you suddenly apply the brakes. Both control systems — steering and braking — have to do their work where the tires meet the road. Unless you have four-wheel anti-lock brakes, adding the hard braking can demand too much of those places. You can lose control.

The same thing can happen if you are steering through a sharp curve and you suddenly accelerate. Those two control systems — steering and acceleration — can overwhelm those places where the tires meet the road and make you lose control. See *Enhanced Traction System (ETS) on page 4-8*.

What should you do if this ever happens? Ease up on the brake or accelerator pedal, steer the vehicle the way you want it to go, and slow down.

Speed limit signs near curves warn that you should adjust your speed. Of course, the posted speeds are based on good weather and road conditions. Under less favorable conditions you will want to go slower.

If you need to reduce your speed as you approach a curve, do it before you enter the curve, while your front wheels are straight ahead.

Try to adjust your speed so you can “drive” through the curve. Maintain a reasonable, steady speed. Wait to accelerate until you are out of the curve, and then accelerate gently into the straightaway.

## Steering in Emergencies

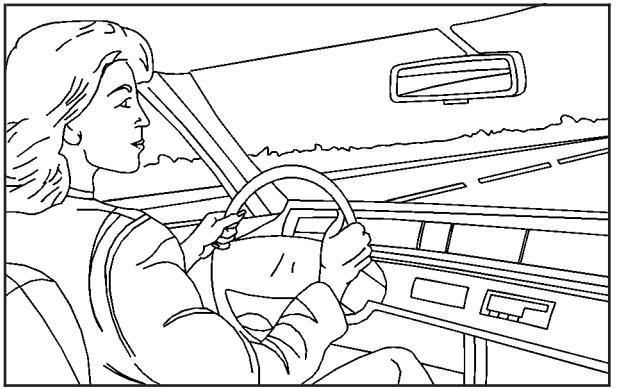
There are times when steering can be more effective than braking. For example, you come over a hill and find a truck stopped in your lane, or a car suddenly pulls out from nowhere, or a child darts out from between parked cars and stops right in front of you. You can avoid these problems by braking — if you can stop in time. But sometimes you can not; there is not room. That is the time for evasive action — steering around the problem.

Your vehicle can perform very well in emergencies like these. First apply your brakes — but, unless you have anti-lock, not enough to lock your wheels.

See *Braking on page 4-5*. It is better to remove as much speed as you can from a possible collision. Then steer around the problem, to the left or right depending on the space available.



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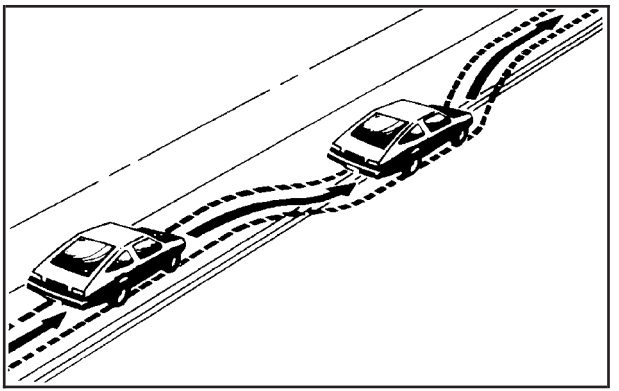


An emergency like this requires close attention and a quick decision. If you are holding the steering wheel at the recommended 9 and 3 o'clock positions, you can turn it a full 180 degrees very quickly without removing either hand. But you have to act fast, steer quickly, and just as quickly straighten the whee once you have avoided the object.

The fact that such emergency situations are always possible is a good reason to practice defensive driving at all times and wear safety belts properly.

## Off-Road Recovery

You may find that your right wheels have dropped off the edge of a road onto the shoulder while you're driving.



If the level of the shoulder is only slightly below the pavement, recovery should be fairly easy. Ease off the accelerator and then, if there is nothing in the way, steer so that your vehicle straddles the edge of the pavement. You can turn the steering wheel up to one-quarter turn until the right front tire contacts the pavement edge. Then turn your steering wheel to go straight down the roadway.

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## Passing

The driver of a vehicle about to pass another on a two-lane highway waits for just the right moment, accelerates, moves around the vehicle ahead, then goes back into the right lane again. A simple maneuver?

Not necessarily! Passing another vehicle on a two-lane highway is a potentially dangerous move, since the passing vehicle occupies the same lane as oncoming traffic for several seconds. A miscalculation, an error in judgment, or a brief surrender to frustration or anger can suddenly put the passing driver face to face with the worst of all traffic accidents — the head-on collision.

So here are some tips for passing:

- "Drive ahead." Look down the road, to the sides and to crossroads for situations that might affect your passing patterns. If you have any doubt whatsoever about making a successful pass, wait for a better time.
- Watch for traffic signs, pavement markings and lines. If you can see a sign up ahead that might indicate a turn or an intersection, delay your pass. A broken center line usually indicates it is all right to pass (providing the road ahead is clear). Never cross a solid line on your side of the lane or a double solid line, even if the road seems empty of approaching traffic.
- Do not get too close to the vehicle you want to pass while you are awaiting an opportunity. For one thing, following too closely reduces your area of vision, especially if you are following a larger vehicle. Also, you will not have adequate space if the vehicle ahead suddenly slows or stops. Keep back a reasonable distance.
- When it looks like a chance to pass is coming up, start to accelerate but stay in the right lane and do not get too close. Time your move so you will be increasing speed as the time comes to move into the other lane. If the way is clear to pass, you will have a "running start" that more than makes up for the distance you would lose by dropping back. And if something happens to cause you to cancel your pass, you need only slow down and drop back again and wait for another opportunity.
- If other vehicles are lined up to pass a slow vehicle, wait your turn. But take care that someone is not trying to pass you as you pull out to pass the slow vehicle. Remember to glance over your shoulder and check the blind spot.



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- Check your mirrors, glance over your shoulder, and start your left lane change signal before moving out of the right lane to pass. When you are far enough ahead of the passed vehicle to see its front in your inside mirror, activate your right lane change signal and move back into the right lane. (Remember that your right outside mirror is convex. The vehicle you just passed may seem to be farther away from you than it really is.)
- Try not to pass more than one vehicle at a time on two-lane roads. Reconsider before passing the next vehicle.
- Do not overtake a slowly moving vehicle too rapidly. Even though the brake lamps are not flashing, it may be slowing down or starting to turn.
- If you are being passed, make it easy for the following driver to get ahead of you. Perhaps you can ease a little to the right.

## Loss of Control

Let us review what driving experts say about what happens when the three control systems (brakes, steering and acceleration) do not have enough friction where the tires meet the road to do what the driver has asked.

In any emergency, do not give up. Keep trying to steer and constantly seek an escape route or area of less danger.

## Skidding

In a skid, a driver can lose control of the vehicle. Defensive drivers avoid most skids by taking reasonable care suited to existing conditions, and by not "overdriving" those conditions. But skids are always possible.

The three types of skids correspond to your vehicle's three control systems. In the braking skid, your wheels are not rolling. In the steering or cornering skid, too much speed or steering in a curve causes tires to slip and lose cornering force. And in the acceleration skid, too much throttle causes the driving wheels to spin.

A cornering skid is best handled by easing your foot off the accelerator pedal.

If you have the Enhanced Traction System, remember: It helps avoid only the acceleration skid. If you do not have the Enhanced Traction System, or if the transaxle is not in AUTOMATIC OVERDRIVE (D), then an acceleration skid is also best handled by easing your foot off the accelerator pedal.

If your vehicle starts to slide, ease your foot off the accelerator pedal and quickly steer the way you want the vehicle to go. If you start steering quickly enough, your vehicle may straighten out. Always be ready for a second skid if it occurs.

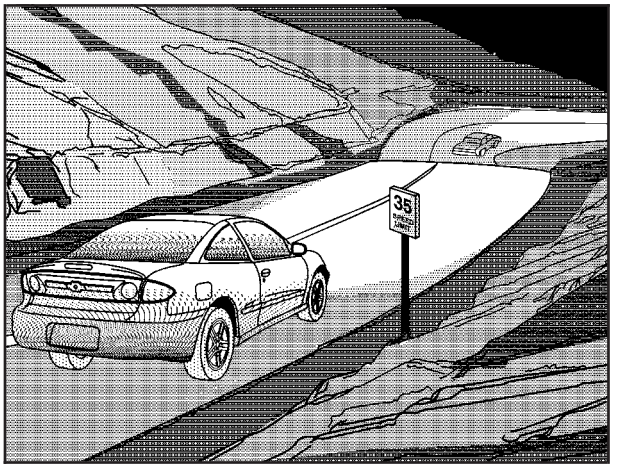
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Of course, traction is reduced when water, snow, ice, gravel or other material is on the road. For safety, you will want to slow down and adjust your driving to these conditions. It is important to slow down on slippery surfaces because stopping distance will be longer and vehicle control more limited.

While driving on a surface with reduced traction, try your best to avoid sudden steering, acceleration or braking (including engine braking by shifting to a lower gear). Any sudden changes could cause the tires to slide. You may not realize the surface is slippery until your vehicle is skidding. Learn to recognize warning clues — such as enough water, ice or packed snow on the road to make a “mirrored surface” — and slow down when you have any doubt.

If you have the anti-lock braking system, remember: It helps avoid only the braking skid. If you do not have anti-lock, then in a braking skid (where the wheels are no longer rolling), release enough pressure on the brakes to get the wheels rolling again. This restores steering control. Push the brake pedal down steadily when you have to stop suddenly. As long as the wheels are rolling, you will have steering control.

## Driving at Night




Night driving is more dangerous than day driving. One reason is that some drivers are likely to be impaired — by alcohol or drugs, with night vision problems, or by fatigue.



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Here are some tips on night driving.

- Drive defensively.
- Do not drink and drive.
- Adjust your inside rearview mirror to reduce the glare from headlamps behind you.
- Since you can not see as well, you may need to slow down and keep more space between you and other vehicles.
- Slow down, especially on higher speed roads. Your headlamps can light up only so much road ahead.
- In remote areas, watch for animals.
- If you are tired, pull off the road in a safe place and rest.

No one can see as well at night as in the daytime. But as we get older these differences increase. A 50-year-old driver may require at least twice as much light to see the same thing at night as a 20-year-old.

What you do in the daytime can also affect your night vision. For example, if you spend the day in bright sunshine you are wise to wear sunglasses. Your eyes will have less trouble adjusting to night. But if you are driving, do not wear sunglasses at night. They may cut down on glare from headlamps, but they also make a lot of things invisible.

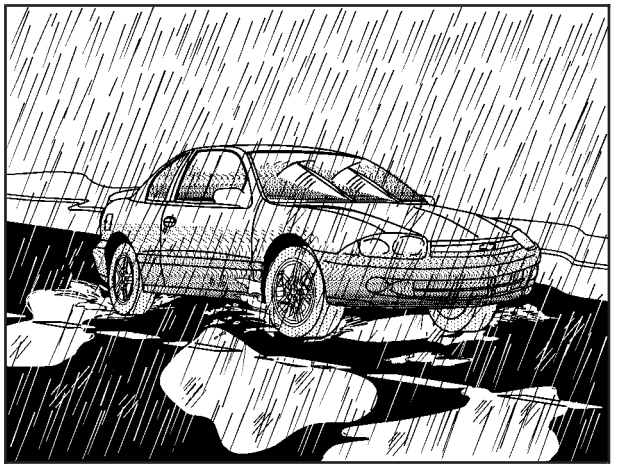
You can be temporarily blinded by approaching headlamps. It can take a second or two, or even several seconds, for your eyes to readjust to the dark. When you are faced with severe glare (as from a driver who does not lower the high beams, or a vehicle with misaimed headlamps), slow down a little. Avoid staring directly into the approaching headlamps.

Keep your windshield and all the glass on your vehicle clean — inside and out. Glare at night is made much worse by dirt on the glass. Even the inside of the glass can build up a film caused by dust. Dirty glass makes lights dazzle and flash more than clean glass would, making the pupils of your eyes contract repeatedly.

Remember that your headlamps light up far less of a roadway when you are in a turn or curve. Keep your eyes moving; that way, it is easier to pick out dimly lighted objects. Just as your headlamps should be checked regularly for proper aim, so should your eyes be examined regularly. Some drivers suffer from night blindness — the inability to see in dim light — and are not even aware of it.

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## Driving in Rain and on Wet Roads



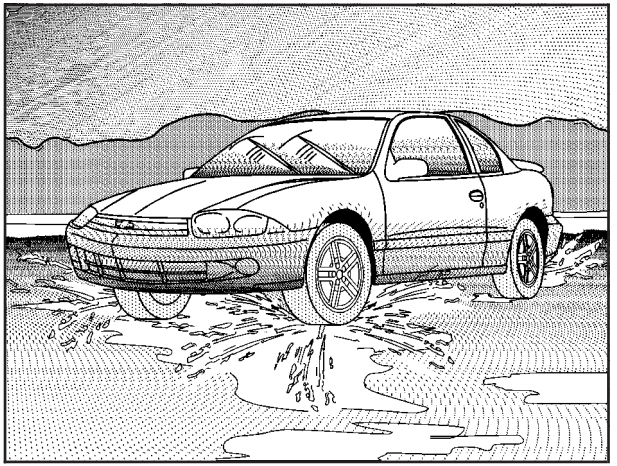
Rain and wet roads can mean driving trouble. On a wet road, you can not stop, accelerate or turn as well because your tire-to-road traction is not as good as on dry roads. And, if your tires do not have much tread left, you will get even less traction. It is always wise to go slower and be cautious if rain starts to fall while you are driving. The surface may get wet suddenly when your reflexes are tuned for driving on dry pavement.

The heavier the rain, the harder it is to see. Even if your windshield wiper blades are in good shape, a heavy rain can make it harder to see road signs and traffic signals, pavement markings, the edge of the road and even people walking.

It is wise to keep your windshield wiping equipment in good shape and keep your windshield washer tank filled with washer fluid. Replace your windshield wiper inserts when they show signs of streaking or missing areas on the windshield, or when strips of rubber start to separate from the inserts.



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Driving too fast through large water puddles or even going through some car washes can cause problems, too. The water may affect your brakes. Try to avoid puddles. But if you can not, try to slow down before you hit them.

**⚠ CAUTION:**

**Wet brakes can cause accidents. They will not work as well in a quick stop and may cause pulling to one side. You could lose control of the vehicle.**

**After driving through a large puddle of water or a car wash, apply your brake pedal lightly until your brakes work normally.**

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## Hydroplaning

Hydroplaning is dangerous. So much water can build up under your tires that they can actually ride on the water. This can happen if the road is wet enough and you are going fast enough. When your vehicle is hydroplaning, it has little or no contact with the road.

Hydroplaning does not happen often. But it can if your tires do not have much tread or if the pressure in one or more is low. It can happen if a lot of water is standing on the road. If you can see reflections from trees, telephone poles or other vehicles, and raindrops “dimple” the water’s surface, there could be hydroplaning.

Hydroplaning usually happens at higher speeds. There just is not a hard and fast rule about hydroplaning. The best advice is to slow down when it is raining.

## Driving Through Deep Standing Water

***Notice:*** **If you drive too quickly through deep puddles or standing water, water can come in through your engine’s air intake and badly damage your engine. Never drive through water that is slightly lower than the underbody of your vehicle. If you can not avoid deep puddles or standing water, drive through them very slowly.**

## Driving Through Flowing Water

**⚠ CAUTION:**

**Flowing or rushing water creates strong forces. If you try to drive through flowing water, as you might at a low water crossing, your vehicle can be carried away. As little as six inches of flowing water can carry away a smaller vehicle. If this happens, you and other vehicle occupants could drown. Do not ignore police warning signs, and otherwise be very cautious about trying to drive through flowing water.**

## Some Other Rainy Weather Tips

- Besides slowing down, allow some extra following distance. And be especially careful when you pass another vehicle. Allow yourself more clear room ahead, and be prepared to have your view restricted by road spray.
- Have good tires with proper tread depth. See *Tires on page 5-46*.



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## City Driving



One of the biggest problems with city streets is the amount of traffic on them. You will want to watch out for what the other drivers are doing and pay attention to traffic signals.

Here are ways to increase your safety in city driving:

- Know the best way to get to where you are going. Get a city map and plan your trip into an unknown part of the city just as you would for a cross-country trip.
- Try to use the freeways that rim and crisscross most large cities. You will save time and energy. See *Freeway Driving on page 4-20*.
- Treat a green light as a warning signal. A traffic light is there because the corner is busy enough to need it. When a light turns green, and just before you start to move, check both ways for vehicles that have not cleared the intersection or may be running the red light.

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## Freeway Driving



Mile for mile, freeways (also called thruways, parkways, expressways, turnpikes or superhighways) are the safest of all roads. But they have their own special rules.

The most important advice on freeway driving is: Keep up with traffic and keep to the right. Drive at the same speed most of the other drivers are driving. Too-fast or too-slow driving breaks a smooth traffic flow. Treat the left lane on a freeway as a passing lane.

At the entrance, there is usually a ramp that leads to the freeway. If you have a clear view of the freeway as you drive along the entrance ramp, you should begin to check traffic. Try to determine where you expect to blend with the flow. Try to merge into the gap at close to the prevailing speed. Switch on your turn signal, check your mirrors and glance over your shoulder as often as necessary. Try to blend smoothly with the traffic flow.

Once you are on the freeway, adjust your speed to the posted limit or to the prevailing rate if it is slower. Stay in the right lane unless you want to pass.

Before changing lanes, check your mirrors. Then use your turn signal.

Just before you leave the lane, glance quickly over your shoulder to make sure there is not another vehicle in your “blind” spot.



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Once you are moving on the freeway, make certain you allow a reasonable following distance.

Expect to move slightly slower at night.

When you want to leave the freeway, move to the proper lane well in advance. If you miss your exit, do not, under any circumstances, stop and back up. Drive on to the next exit.

The exit ramp can be curved, sometimes quite sharply. The exit speed is usually posted. Reduce your speed according to your speedometer, not to your sense of motion. After driving for any distance at higher speeds, you may tend to think you are going slower than you actually are.

## Before Leaving on a Long Trip

Make sure you are ready. Try to be well rested. If you must start when you are not fresh — such as after a day's work — do not plan to make too many miles that first part of the journey. Wear comfortable clothing and shoes you can easily drive in.

Is your vehicle ready for a long trip? If you keep it serviced and maintained, it is ready to go. If it needs service, have it done before starting out. Of course, you will find experienced and able service experts in GM dealerships all across North America. They will be ready and willing to help if you need it.

Here are some things you can check before a trip:

- *Windshield Washer Fluid:* Is the reservoir full? Are all windows clean inside and outside?
- *Wiper Blades:* Are they in good shape?
- *Fuel, Engine Oil, Other Fluids:* Have you checked all levels?
- *Lamps:* Are they all working? Are the lenses clean?
- *Tires:* They are vitally important to a safe, trouble-free trip. Is the tread good enough for long-distance driving? Are the tires all inflated to the recommended pressure?
- *Weather Forecasts:* What is the weather outlook along your route? Should you delay your trip a short time to avoid a major storm system?
- *Maps:* Do you have up-to-date maps?

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DEALER E-PROCESS

## Highway Hypnosis

Is there actually such a condition as “highway hypnosis”? Or is it just plain falling asleep at the wheel? Call it highway hypnosis, lack of awareness, or whatever.

There is something about an easy stretch of road with the same scenery, along with the hum of the tires on the road, the drone of the engine, and the rush of the wind against the vehicle that can make you sleepy. Do not let it happen to you! If it does, your vehicle can leave the road in *less than a second,* and you could crash and be injured.

What can you do about highway hypnosis? First, be aware that it can happen.

Then here are some tips:

- Make sure your vehicle is well ventilated, with a comfortably cool interior.
- Keep your eyes moving. Scan the road ahead and to the sides. Check your rearview mirrors and your instruments frequently.
- If you get sleepy, pull off the road into a rest, service or parking area and take a nap, get some exercise, or both. For safety, treat drowsiness on the highway as an emergency.

## Hill and Mountain Roads



Driving on steep hills or mountains is different from driving in flat or rolling terrain.

If you drive regularly in steep country, or if you are planning to visit there, here are some tips that can make your trips safer and more enjoyable.

- Keep your vehicle in good shape. Check all fluid levels and also the brakes, tires, cooling system and transaxle. These parts can work hard on mountain roads.



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- Know how to go down hills. The most important thing to know is this: let your engine do some of the slowing down. Shift to a lower gear when you go down a steep or long hill.

**⚠ CAUTION:**

**If you do not shift down, your brakes could get so hot that they would not work well. You would then have poor braking or even none going down a hill. You could crash. Shift down to let your engine assist your brakes on a steep downhill slope.**

**⚠ CAUTION:**

**Coasting downhill in NEUTRAL (N) or with the ignition off is dangerous. Your brakes will have to do all the work of slowing down. They could get so hot that they would not work well. You**

**CAUTION: (Continued)**

**CAUTION: (Continued)**

**would then have poor braking or even none going down a hill. You could crash. Always have your engine running and your vehicle in gear when you go downhill.**

- Know how to go uphill. You may want to shift down to a lower gear. The lower gears help cool your engine and transaxle, and you can climb the hill better.
- Stay in your own lane when driving on two-lane roads in hills or mountains. Do not swing wide or cut across the center of the road. Drive at speeds that let you stay in your own lane.
- As you go over the top of a hill, be alert. There could be something in your lane, like a stalled car or an accident.
- You may see highway signs on mountains that warn of special problems. Examples are long grades, passing or no-passing zones, a falling rocks area or winding roads. Be alert to these and take appropriate action.

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## Winter Driving



Here are some tips for winter driving:

- Have your vehicle in good shape for winter.
- You may want to put winter emergency supplies in your trunk.



Include an ice scraper, a small brush or broom, a supply of windshield washer fluid, a rag, some winter outer clothing, a small shovel, a flashlight, a red cloth and a couple of reflective warning triangles. And, if you will be driving under severe conditions, include a small bag of sand, a piece of old carpet or a couple of burlap bags to help provide traction. Be sure you properly secure these items in your vehicle.

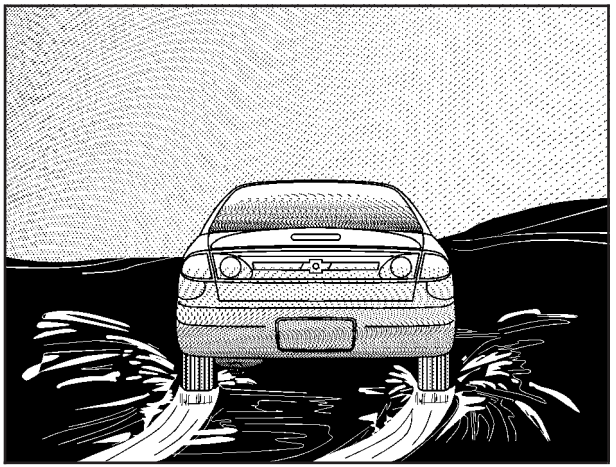


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## Driving on Snow or Ice

Most of the time, those places where your tires meet the road probably have good traction.

However, if there is snow or ice between your tires and the road, you can have a very slippery situation. You will have a lot less traction or “grip” and will need to be very careful.



What is the worst time for this? “Wet ice.” Very cold snow or ice can be slick and hard to drive on. But wet ice can be even more trouble because it may offer the least traction of all. You can get wet ice when it is about freezing (32°F; 0°C) and freezing rain begins to fall. Try to avoid driving on wet ice until salt and sand crews can get there.

Whatever the condition — smooth ice, packed, blowing or loose snow — drive with caution.

If you have the Enhanced Traction System, keep the transaxle shift lever in the AUTOMATIC OVERDRIVE (D) position so the system will be able to operate. It will improve your ability to accelerate when driving on a slippery road. Even though your vehicle has this system, you will want to slow down and adjust your driving to the road conditions. See *Enhanced Traction System (ETS) on page 4-8*.

If you do not have the Enhanced Traction System, accelerate gently. Try not to break the fragile traction. If you accelerate too fast, the drive wheels will spin and polish the surface under the tires even more.

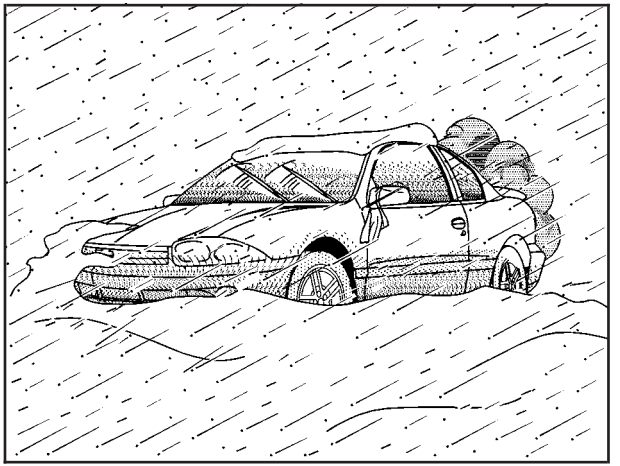
Unless you have the anti-lock braking system, you will want to brake very gently, too. (If you do have anti-lock, see *Braking on page 4-5*. This system improves your vehicle’s stability when you make a hard stop on a slippery road.) Whether you have the anti-lock braking system or not, you will want to begin stopping sooner than you would on dry pavement. Without anti-lock brakes, if you feel your vehicle begin to slide, let up on the brakes a little. Push the brake pedal down steadily to get the most traction you can.

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Remember, unless you have anti-lock, if you brake so hard that your wheels stop rolling, you will just slide. Brake so your wheels always keep rolling and you can still steer.

- Whatever your braking system, allow greater following distance on any slippery road.
- Watch for slippery spots. The road might be fine until you hit a spot that is covered with ice. On an otherwise clear road, ice patches may appear in shaded areas where the sun can not reach: around clumps of trees, behind buildings or under bridges. Sometimes the surface of a curve or an overpass may remain icy when the surrounding roads are clear. If you see a patch of ice ahead of you, brake before you are on it. Try not to brake while you are actually on the ice, and avoid sudden steering maneuvers.

## If You Are Caught in a Blizzard



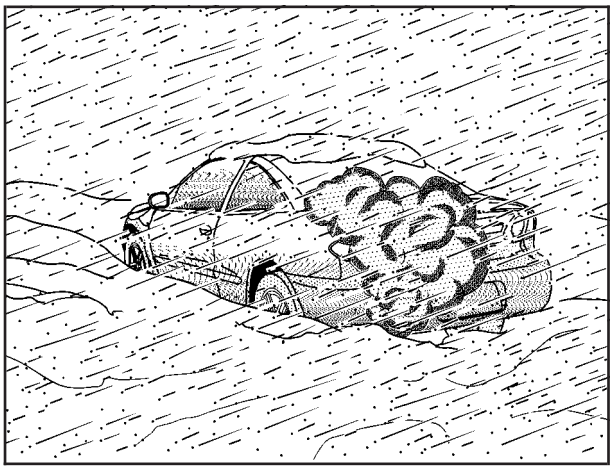
If you are stopped by heavy snow, you could be in a serious situation. You should probably stay with your vehicle unless you know for sure that you are near help and you can hike through the snow. Here are some things to do to summon help and keep yourself and your passengers safe:

- Turn on your hazard flashers.



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- Tie a red cloth to your vehicle to alert police that you have been stopped by the snow.
- Put on extra clothing or wrap a blanket around you. If you have no blankets or extra clothing, make body insulators from newspapers, burlap bags, rags, floor mats – anything you can wrap around yourself or tuck under your clothing to keep warm.



You can run the engine to keep warm, but be careful.

**⚠ CAUTION:**

**Snow can trap exhaust gases under your vehicle. This can cause deadly CO (carbon monoxide) gas to get inside. CO could overcome you and kill you. You can not see it or smell it, so you might not know it is in your vehicle. Clear away snow from around the base of your vehicle, especially any that is blocking your exhaust pipe. And check around again from time to time to be sure snow does not collect there.**

**Open a window just a little on the side of the vehicle that is away from the wind. This will help keep CO out.**

Run your engine only as long as you must. This saves fuel. When you run the engine, make it go a little faster than just idle. That is, push the accelerator slightly. This uses less fuel for the heat that you get and it keeps the battery charged. You will need a well-charged battery to restart the vehicle, and possibly for signaling later on with your headlamps. Let the heater run for a while.

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Then, shut the engine off and close the window almost all the way to preserve the heat. Start the engine again and repeat this only when you feel really uncomfortable from the cold. But do it as little as possible. Preserve the fuel as long as you can. To help keep warm, you can get out of the vehicle and do some fairly vigorous exercises every half hour or so until help comes.

## If You Are Stuck: In Sand, Mud, Ice or Snow

In order to free your vehicle when it is stuck, you will need to spin the wheels, but you do not want to spin your wheels too fast. The method known as "rocking" can help you get out when you are stuck, but you must use caution.

**⚠ CAUTION:**

**If you let your tires spin at high speed, they can explode, and you or others could be injured. And, the transaxle or other parts of**

**CAUTION: (Continued)**

**CAUTION: (Continued)**

**the vehicle can overheat. That could cause an engine compartment fire or other damage. When you are stuck, spin the wheels as little as possible. Do not spin the wheels above 35 mph (55 km/h) as shown on the speedometer.**

***Notice:*** **Spinning your wheels can destroy parts of your vehicle as well as the tires. If you spin the wheels too fast while shifting your transaxle back and forth, you can destroy your transaxle. See "Rocking Your Vehicle To Get It Out."**

For information about using tire chains on your vehicle, see *Tire Chains on page 5-60*.



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### Rocking Your Vehicle To Get It Out

First, turn your steering wheel left and right. That will clear the area around your front wheels. Then shift back and forth between REVERSE (R) and a forward gear (or with a manual transaxle, between FIRST (1) or SECOND (2) and REVERSE (R)), spinning the wheels as little as possible. Release the accelerator pedal while you shift, and press lightly on the accelerator pedal when the transaxle is in gear. By slowly spinning your wheels in the forward and reverse directions, you will cause a rocking motion that may free your vehicle. If that does not get you out after a few tries, you may need to be towed out. If you do need to be towed out, see *Towing Your Vehicle on page 4-29*.

# Towing

## Towing Your Vehicle

Consult your dealer or a professional towing service if you need to have your disabled vehicle towed. See *Roadside Assistance Program on page 7-6*.

If you want to tow your vehicle behind another vehicle for recreational purposes (such as behind a motorhome), see “Recreational Vehicle Towing” following.

## Recreational Vehicle Towing

Recreational vehicle towing means towing your vehicle behind another vehicle — such as behind a motorhome. The two most common types of recreational vehicle towing are known as “dinghy towing” (towing your vehicle with all four wheels on the ground) and “dolly towing” (towing your vehicle with two wheels on the ground and two wheels up on a device known as a “dolly”).

With the proper preparation and equipment, many vehicles can be towed in these ways. See “Dinghy Towing” and “Dolly Towing,” following.

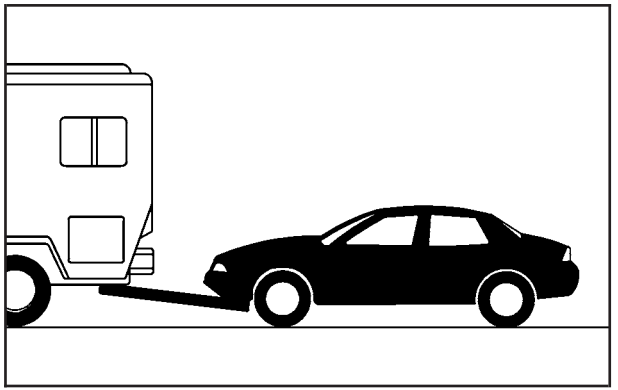
Here are some important things to consider before you do recreational vehicle towing:

- What is the towing capacity of the towing vehicle? Be sure you read the tow vehicle manufacturer’s recommendations.
- How far will you tow? Some vehicles have restrictions on how far and how long they can tow.
- Do you have the proper towing equipment? See your dealer or trailering professional for additional advice and equipment recommendations.
- Is your vehicle ready to be towed? Just as you would prepare your vehicle for a long trip, you will want to make sure your vehicle is prepared to be towed. See *Before Leaving on a Long Trip on page 4-21*.

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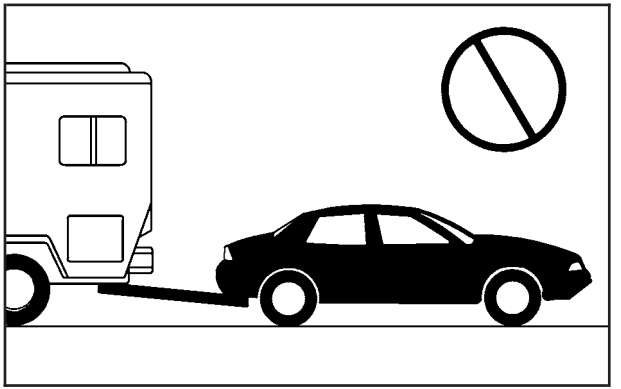
## Dinghy Towing

You may dinghy tow your vehicle from the front following these steps:



1. Set the parking brake.
2. Turn the ignition key to OFF to unlock the steering wheel.
3. Shift your transaxle to NEUTRAL (N).
4. Release the parking brake.

***Notice:*** **If you exceed 65 mph (110 km/h) while towing your vehicle, it could be damaged. Never exceed 65 mph (110 km/h) while towing your vehicle.**



***Notice:*** **Towing your vehicle from the rear could damage it. Also, repairs would not be covered by the warranty. Never have your vehicle towed from the rear.**

## Dolly Towing

Your vehicle cannot be dolly towed, but can be dinghy towed. See “Dinghy Towing” earlier in this section.

***Notice:*** **Dolly towing your vehicle may cause damage because of reduced ground clearance. Always tow your vehicle using the dinghy towing procedure listed in this section or put your vehicle on a flatbed truck.**



DEP DEALER E-PROCESS

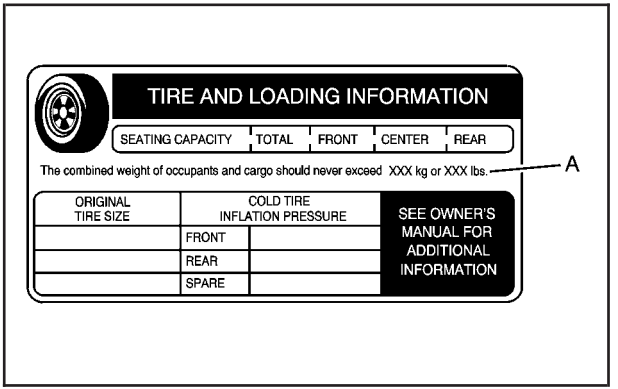
## Loading Your Vehicle

It is very important to know how much weight your vehicle can carry. This weight is called the vehicle capacity weight and includes the weight of all occupants, cargo and all nonfactory-installed options. Two labels on your vehicle show how much weight it may properly carry, the Tire and Loading Information label and the Certification label.

**⚠ CAUTION:**

**Do not load your vehicle any heavier than the GVWR, or either the maximum front or rear GAWR. If you do, parts on your vehicle can break, and it can change the way your vehicle handles. These could cause you to lose control and crash. Also, overloading can shorten the life of your vehicle.**

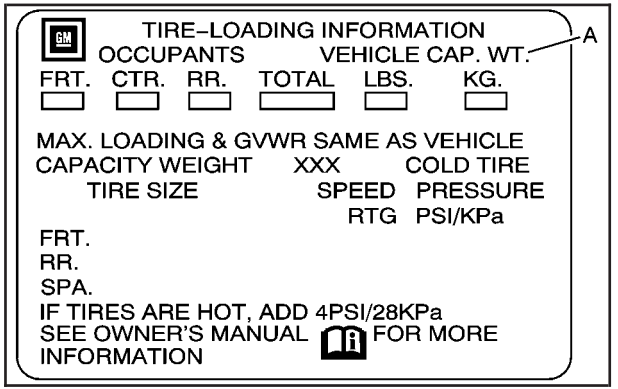
## Tire and Loading Information Label




**Example 1**

A. Vehicle Capacity Weight

DEP DEALER E-PROCESS




**Example 2**

A. Vehicle Capacity Weight

The Tire and Loading Information label shows the seating capacity and the total weight your vehicle can properly carry. This weight is called the vehicle capacity weight. If your vehicle has the Tire and Loading Information label, Example 1, the label is attached to the center pillar, near the driver's door latch. If your vehicle has the Tire-Loading Information label, Example 2, the label is on the rear edge of the driver's door.

The Tire and Loading Information label also gives you the size and recommended inflation pressure for the factory-installed, original equipment tires on your vehicle. For more information on tires and inflation see *Tires on page 5-46* and *Inflation - Tire Pressure on page 5-53*.

There is also important loading information on the Certification label. It tells you the Gross Vehicle Weight Rating (GVWR) and the Gross Axle Weight Rating (GAWR) for the front and rear axle; see "Certification Label" later in this section.

## Steps for Determining Correct Load Limit

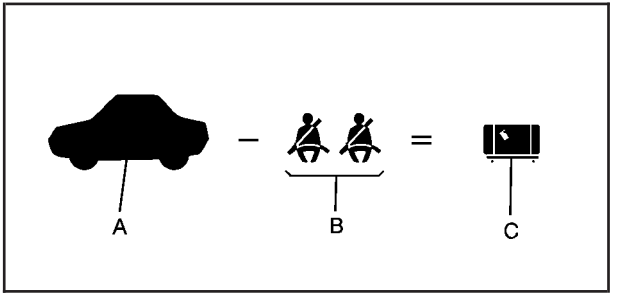
1. Locate the statement "The combined weight of occupants and cargo should never exceed XXX pounds" on your vehicle placard.
2. Determine the combined weight of the driver and passengers that will be riding in your vehicle.
3. Subtract the combined weight of the driver and passengers from XXX kilograms or XXX pounds.
4. The resulting figure equals the available amount of cargo and luggage load capacity. For example, if the "XXX" amount equals 1400 lbs. and there will be five 150 lb. passengers in your vehicle, the amount of available cargo and luggage load capacity is 650 lbs. (1400 – 750 (5 x 150) = 650 lbs.).



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5. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity calculated in Step 4.
6. If your vehicle will be towing a trailer, the load from your trailer will be transferred to your vehicle. Consult this manual to determine how this reduces the available cargo and luggage load capacity of your vehicle.

   If your vehicle can tow a trailer, see *Towing a Trailer (Automatic Transaxle) on page 4-37* or *Towing a Trailer (Manual Transaxle) on page 4-43* for important information on towing a trailer, towing safety rules, and trailering tips.

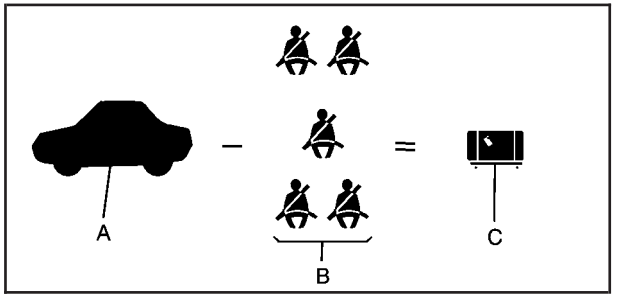



**Example 1**

## Loading Your Vehicle

| Item | Description | Total |
|---|---|---|
| A | Vehicle Capacity Weight for Example 1 = | 1,000 lbs (453 kg) |
| B | Subtract Occupant Weight 150 lbs (68 kg) × 2 = | 300 lbs (136 kg) |
| C | Available Occupant and Cargo Weight = | 700 lbs (317 kg) |

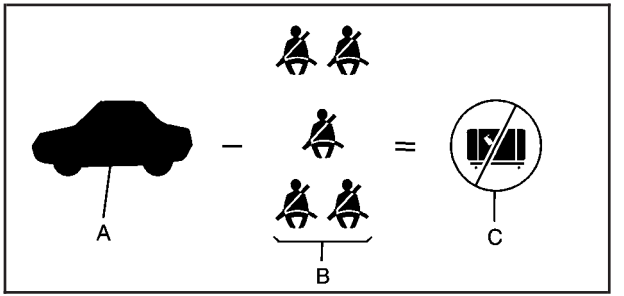
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**Example 2**

## Loading Your Vehicle

| Item | Description | Total |
|---|---|---|
| A | Vehicle Capacity Weight for Example 2 = | 1,000 lbs (453 kg) |
| B | Subtract Occupant Weight 150 lbs (68 kg) × 5 = | 750 lbs (340 kg) |
| C | Available Cargo Weight = | 250 lbs (113 kg) |




**Example 3**

## Loading Your Vehicle

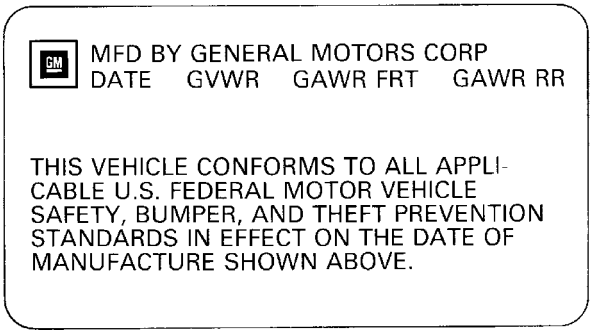
| Item | Description | Total |
|---|---|---|
| A | Vehicle Capacity Weight for Example 3 = | 1,000 lbs (453 kg) |
| B | Subtract Occupant Weight 200 lbs (91 kg) × 5 = | 1,000 lbs (453 kg) |
| C | Available Cargo Weight = | 0 lbs (0 kg) |

Refer to your vehicle's Tire and Loading Information label for specific information about your vehicle's capacity weight and seating positions. The combined weight of the driver, passengers, and cargo should never exceed your vehicle's capacity weight.



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DEALER E-PROCESS

## Certification Label




The Certification label, found on the rear edge of the driver's door, tells you the gross weight capacity of your vehicle, called the Gross Vehicle Weight Rating (GVWR). The GVWR includes the weight of the vehicle, all occupants, fuel and cargo. Never exceed the GVWR for your vehicle, or the Gross Axle Weight Rating (GAWR) for either the front or rear axle.

And, if you do have a heavy load, you should spread it out. Do not carry more than 132 lbs (60 kg) in your trunk.

**⚠ CAUTION:**

**Do not load your vehicle any heavier than the GVWR, or either the maximum front or rear GAWR. If you do, parts on your vehicle can break, and it can change the way your vehicle handles. These could cause you to lose control and crash. Also, overloading can shorten the life of your vehicle.**

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If you put things inside your vehicle — like suitcases, tools, packages, or anything else — they will go as fast as the vehicle goes. If you have to stop or turn quickly, or if there is a crash, they will keep going.

**⚠ CAUTION:**

**Things you put inside your vehicle can strike and injure people in a sudden stop or turn, or in a crash.**

- **Put things in the trunk or rear area of your vehicle. In a trunk, put them as far forward as you can. Try to spread the weight evenly. If you have fold-down rear seats, you will find four anchors on the back wall of your trunk. You can use these anchors to tie down lighter loads. They are not strong enough for heavy things, however, so put them as far forward as you can in the trunk or rear area.**

**CAUTION: (Continued)**

**CAUTION: (Continued)**

- **Never stack heavier things, like suitcases, inside the vehicle so that some of them are above the tops of the seats.**
- **Do not leave an unsecured child restraint in your vehicle.**
- **When you carry something inside the vehicle, secure it whenever you can.**
- **Do not leave a seat folded down unless you need to.**



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## Towing a Trailer (Automatic Transaxle)

**⚠ CAUTION:**

**If you do not use the correct equipment and drive properly, you can lose control when you pull a trailer. For example, if the trailer is too heavy, the brakes may not work well — or even at all. You and your passengers could be seriously injured. You may also damage your vehicle; the resulting repairs would not be covered by your warranty. Pull a trailer only if you have followed all the steps in this section. Ask your dealer for advice and information about towing a trailer with your vehicle.**

Your vehicle can tow a trailer if it is equipped with an automatic transaxle and the proper trailer towing equipment. If your vehicle is not equipped as stated above, do not tow a trailer. To identify what the vehicle trailering capacity is for your vehicle, you should read the information in “Weight of the Trailer” that appears later in this section. But trailering is different than just driving your vehicle by itself. Trailering means changes in handling, acceleration, braking, durability and fuel economy. Successful, safe trailering takes correct equipment, and it has to be used properly.

That is the reason for this part. In it are many time-tested, important trailering tips and safety rules. Many of these are important for your safety and that of your passengers. So please read this section carefully before you pull a trailer.

Load-pulling components such as the engine, transaxle, wheel assemblies and tires are forced to work harder against the drag of the added weight. The engine is required to operate at relatively higher speeds and under greater loads, generating extra heat. Also, the trailer adds considerably to wind resistance, increasing the pulling requirements.

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## If You Do Decide To Pull A Trailer

If you do, here are some important points:

- There are many different laws, including speed limit restrictions, having to do with trailering. Make sure your rig will be legal, not only where you live but also where you will be driving. A good source for this information can be state or provincial police.
- Consider using a sway control. You can ask a hitch dealer about sway controls.
- Do not tow a trailer at all during the first 1,000 miles (1 600 km) your new vehicle is driven. Your engine, axle or other parts could be damaged.
- Then, during the first 500 miles (800 km) that you tow a trailer, do not drive over 50 mph (80 km/h) and do not make starts at full throttle. This helps your engine and other parts of your vehicle wear in at the heavier loads.
- Obey speed limit restrictions when towing a trailer. Do not drive faster than the maximum posted speed for trailers, or no more than 55 mph (90 km/h), to save wear on your vehicle's parts.
- Do not tow when the outside air temperature is above 100°F (38°C).
- Do not tow more than 1,000 miles (1 600 km) per year.

Three important considerations have to do with weight:

- The weight of the trailer.
- The weight of the trailer tongue.
- The total weight on your vehicle's tires.

## Weight of the Trailer

How heavy can a trailer safely be?

It should never weigh more than 1,000 lbs (450 kg). But even that can be too heavy.

It depends on how you plan to use your rig. For example, speed, altitude, road grades, outside temperature and how much your vehicle is used to pull a trailer are all important. And, it can also depend on any special equipment that you have on your vehicle.

You can ask your dealer for our trailering information or advice, or you can write us at:

Chevrolet Motor Division
Customer Assistance Center
P.O. Box 33170
Detroit, MI 48232-5170

In Canada write to:

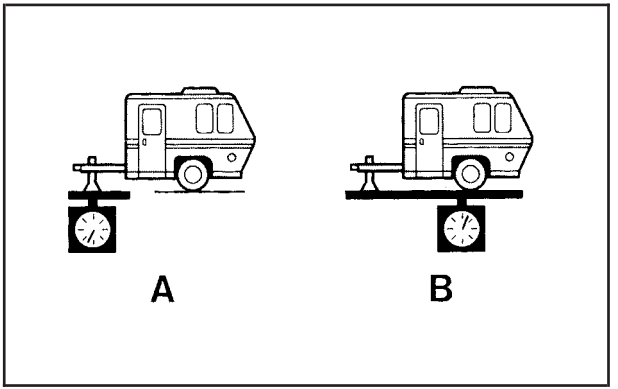
General Motors of Canada Limited
Customer Communication Centre, 163-005
1908 Colonel Sam Drive
Oshawa, Ontario, L1H 8P7



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## Weight of the Trailer Tongue

The tongue load (A) of any trailer is an important weight to measure because it affects the total or gross weight of your vehicle. The Gross Vehicle Weight (GVW) includes the curb weight of the vehicle, any cargo you may carry in it, and the people who will be riding in the vehicle. If you have a lot of options, equipment, passengers, or cargo in your vehicle, it will reduce the tongue weight your vehicle can carry, which will also reduce the trailer weight your vehicle can tow. And if you tow a trailer, you must add the tongue load to the GVW because your vehicle will be carrying that weight, too. See *Loading Your Vehicle on page 4-31* for more information about your vehicle's maximum load capacity.




If you are using a weight-carrying hitch, the trailer tongue (A) should weigh 10 to 15 percent of the total loaded trailer weight (B).

After you have loaded your trailer, weigh the trailer and then the tongue, separately, to see if the weights are proper. If they are not, you may be able to get them right simply by moving some items around in the trailer.

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## Total Weight on Your Vehicle's Tires

Be sure your vehicle's tires are inflated to the upper limit for cold tires. You'll find these numbers on the Tire-Loading Information label. See *Loading Your Vehicle on page 4-31*. Then be sure you do not go over the GVW limit for your vehicle, including the weight of the trailer tongue.

## Hitches

It is important to have the correct hitch equipment. Crosswinds, large trucks going by and rough roads are a few reasons why you will need the right hitch. Here are some rules to follow:

- The rear bumper on your vehicle is not intended for hitches. Do not attach rental hitches or other bumper-type hitches to it. Use only a frame-mounted hitch that does not attach to the bumper.
- Will you have to make any holes in the body of your vehicle when you install a trailer hitch? If you do, then be sure to seal the holes later when you remove the hitch. If you do not seal them, deadly carbon monoxide (CO) from your exhaust can get into your vehicle. See *Engine Exhaust on page 2-28*. Dirt and water can also enter the vehicle.

## Safety Chains

You should always attach chains between your vehicle and your trailer. Cross the safety chains under the tongue of the trailer so that the tongue will not drop to the road if it becomes separated from the hitch. Instructions about safety chains may be provided by the hitch manufacturer or by the trailer manufacturer. Follow the manufacturer's recommendation for attaching safety chains and do not attach them to the bumper. Always leave just enough slack so you can turn with your rig. And, never allow safety chains to drag on the ground.

## Trailer Brakes

Does your trailer have its own brakes? Be sure to read and follow the instructions for the trailer brakes so you will be able to install, adjust and maintain them properly. Do not try to tap into your vehicle's brake system. If you do, both brake systems will not work well, or at all.

## Driving with a Trailer

Towing a trailer requires a certain amount of experience. Before setting out for the open road, you will want to get to know your rig. Acquaint yourself with the feel of handling and braking with the added weight of the trailer. And always keep in mind that the vehicle you are driving is now a good deal longer and not nearly as responsive as your vehicle is by itself.



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Before you start, check all trailer hitch parts and attachments, safety chains, electrical connector, lamps, tires and mirror adjustment. If the trailer has electric brakes, start your vehicle and trailer moving and then apply the trailer brake controller by hand to be sure the brakes are working. This lets you check your electrical connection at the same time.

During your trip, check occasionally to be sure that the load is secure, and that the lamps and any trailer brakes are still working.

## Following Distance

Stay at least twice as far behind the vehicle ahead as you would when driving your vehicle without a trailer. This can help you avoid situations that require heavy braking and sudden turns.

## Passing

You will need more passing distance up ahead when you are towing a trailer. And, because the vehicle is a good deal longer, you will need to go much farther beyond the passed vehicle before you can return to your lane.

## Backing Up

Hold the bottom of the steering wheel with one hand. Then, to move the trailer to the left, just move that hand to the left. To move the trailer to the right, move your hand to the right. Always back up slowly and, if possible, have someone guide you.

## Making Turns

***Notice:*** **Making very sharp turns while trailering could cause the trailer to come in contact with the vehicle. Your vehicle could be damaged. Avoid making very sharp turns while trailering.**

When you are turning with a trailer, make wider turns than normal. Do this so your trailer will not strike soft shoulders, curbs, road signs, trees or other objects. Avoid jerky or sudden maneuvers. Signal well in advance.

## Turn Signals When Towing a Trailer

When you tow a trailer, your vehicle may need a different turn signal flasher and/or extra wiring. Check with your dealer. The arrows on your instrument panel will flash whenever you signal a turn or lane change. Properly hooked up, the trailer lamps will also flash, telling other drivers you are about to turn, change lanes or stop.

When towing a trailer, the arrows on your instrument panel will flash for turns even if the bulbs on the trailer are burned out. Thus, you may think drivers behind you are seeing your signal when they are not. It is important to check occasionally to be sure the trailer bulbs are still working.

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## Driving on Grades

***Notice:*** **Do not tow on steep continuous grades exceeding 6 miles (9.6 km). Extended, higher than normal engine and transaxle temperatures may result and damage your vehicle. Frequent stops are very important to allow the engine and transaxle to cool.**

Reduce speed and shift to a lower gear *before* you start down a long or steep downgrade. If you do not shift down, you might have to use your brakes so much that they would get hot and no longer work well.

Pay attention to the engine coolant gage. If the indicator is in the red area, turn off the air conditioning to reduce engine load. See *Engine Overheating on page 5-23*.

## Parking on Hills

**⚠ CAUTION:**

**You really should not park your vehicle, with a trailer attached, on a hill. If something goes wrong, your rig could start to move. People can be injured, and both your vehicle and the trailer can be damaged.**

But if you ever have to park your rig on a hill, here is how to do it:

1. Apply your regular brakes, but do not shift into PARK (P) yet. When parking uphill, turn your wheels away from the curb. When parking downhill, turn your wheels into the curb.
2. Have someone place chocks under the trailer wheels.
3. When the wheel chocks are in place, release the regular brakes until the chocks absorb the load.
4. Reapply the regular brakes. Then apply your parking brake, and then shift to PARK (P).
5. Release the regular brakes.



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## When You Are Ready to Leave After Parking on a Hill

1. Apply your regular brakes and hold the pedal down while you:
   - Start your engine.
   - Shift into a gear.
   - Release the parking brake.
2. Let up on the brake pedal.
3. Drive slowly until the trailer is clear of the chocks.
4. Stop and have someone pick up and store the chocks.

## Maintenance When Trailer Towing

Your vehicle will need service more often when you are pulling a trailer. See *Part A: Scheduled Maintenance Services on page 6-4* for more on this. Things that are especially important in trailer operation are automatic transaxle fluid (don't overfill), engine oil, drive belt, cooling system and brake system.

Each of these is covered in this manual, and the Index will help you find them quickly. If you are trailering, it is a good idea to review this information before you start your trip.

Check periodically to see that all hitch nuts and bolts are tight.

## Engine Cooling When Trailer Towing

Your cooling system may temporarily overheat during severe operating conditions. See *Engine Overheating on page 5-23*.

# Towing a Trailer (Manual Transaxle)

Do not tow a trailer if your vehicle is equipped with a manual transaxle.

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## NOTES



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# Section 5 Service and Appearance Care


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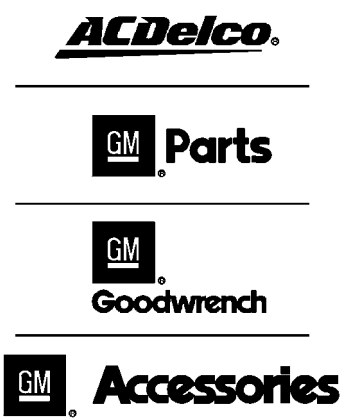



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# Service

Your dealer knows your vehicle best and wants you to be happy with it. We hope you will go to your dealer for all your service needs. You will get genuine GM parts and GM-trained and supported service people.

We hope you will want to keep your GM vehicle all GM. Genuine GM parts have one of these marks:




# Doing Your Own Service Work

If you want to do some of your own service work, you will want to use the proper service manual. It tells you much more about how to service your vehicle than this manual can. To order the proper service manual, see *Service Publications Ordering Information on page 7-11*.

Your vehicle has an air bag system. Before attempting to do your own service work, see *Servicing Your Air Bag-Equipped Vehicle on page 1-56*.

You should keep a record with all parts receipts and list the mileage and the date of any service work you perform. See *Part E: Maintenance Record on page 6-27*.

**⚠ CAUTION:**

**You can be injured and your vehicle could be damaged if you try to do service work on a vehicle without knowing enough about it.**

- **Be sure you have sufficient knowledge, experience, the proper replacement parts and tools before you attempt any vehicle maintenance task.**

**CAUTION: (Continued)**

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**CAUTION: (Continued)**

- **Be sure to use the proper nuts, bolts and other fasteners. “English” and “metric” fasteners can be easily confused. If you use the wrong fasteners, parts can later break or fall off. You could be hurt.**

## Adding Equipment to the Outside of Your Vehicle

Things you might add to the outside of your vehicle can affect the airflow around it. This may cause wind noise and affect windshield washer performance. Check with your dealer before adding equipment to the outside of your vehicle.

# Fuel

Use of the recommended fuel is an important part of the proper maintenance of your vehicle.

## Gasoline Octane

Use regular unleaded gasoline with a posted octane of 87 or higher. If the octane is less than 87, you may get a heavy knocking noise when you drive. If this occurs, use a gasoline rated at 87 octane or higher as soon as possible. Otherwise, you might damage your engine. A little pinging noise when you accelerate or drive uphill is considered normal. This does not indicate a problem exists or that a higher-octane fuel is necessary. If you are using 87 octane or higher-octane fuel and hear heavy knocking, your engine needs service.



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## Gasoline Specifications

It is recommended that gasoline meet specifications which were developed by automobile manufacturers around the world and contained in the World-Wide Fuel Charter which is available from the Alliance of Automobile Manufacturers at www.autoalliance.org. Gasoline meeting these specifications could provide improved driveability and emission control system performance compared to other gasoline.




**Canada Only**

In Canada, look for the "Auto Makers' Choice" label on the pump.

## California Fuel

If your vehicle is certified to meet California Emission Standards (see the underhood emission control label), it is designed to operate on fuels that meet California specifications. If this fuel is not available in states adopting California emissions standards, your vehicle will operate satisfactorily on fuels meeting federal specifications, but emission control system performance may be affected. The malfunction indicator lamp may turn on (see *Malfunction Indicator Lamp on page 3-29* ) and your vehicle may fail a smog-check test. If this occurs, return to your authorized GM dealer for diagnosis. If it is determined that the condition is caused by the type of fuel used, repairs may not be covered by your warranty.

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## Additives

To provide cleaner air, all gasolines in the United States are now required to contain additives that will help prevent engine and fuel system deposits from forming, allowing your emission control system to work properly. You should not have to add anything to your fuel. However, some gasolines contain only the minimum amount of additive required to meet U.S. Environmental Protection Agency regulations. General Motors recommends that you buy gasolines that are advertised to help keep fuel injectors and intake valves clean. If your vehicle experiences problems due to dirty injectors or valves, try a different brand of gasoline.

Gasolines containing oxygenates, such as ethers and ethanol, and reformulated gasolines may be available in your area to contribute to clean air. General Motors recommends that you use these gasolines, particularly if they comply with the specifications described earlier.

***Notice:*** **Your vehicle was not designed for fuel that contains methanol. Do not use fuel containing methanol. It can corrode metal parts in your fuel system and also damage the plastic and rubber parts. That damage would not be covered under your warranty.**

Some gasolines that are not reformulated for low emissions may contain an octane-enhancing additive called methylcyclopentadienyl manganese tricarbonyl (MMT); ask the attendant where you buy gasoline whether the fuel contains MMT. General Motors does not recommend the use of such gasolines. Fuels containing MMT can reduce the life of spark plugs and the performance of the emission control system may be affected. The malfunction indicator lamp may turn on. If this occurs, return to your authorized GM dealer for service.

## Fuels in Foreign Countries

If you plan on driving in another country outside the United States or Canada, the proper fuel may be hard to find. Never use leaded gasoline or any other fuel not recommended in the previous text on fuel. Costly repairs caused by use of improper fuel would not be covered by your warranty.

To check the fuel availability, ask an auto club, or contact a major oil company that does business in the country where you will be driving.

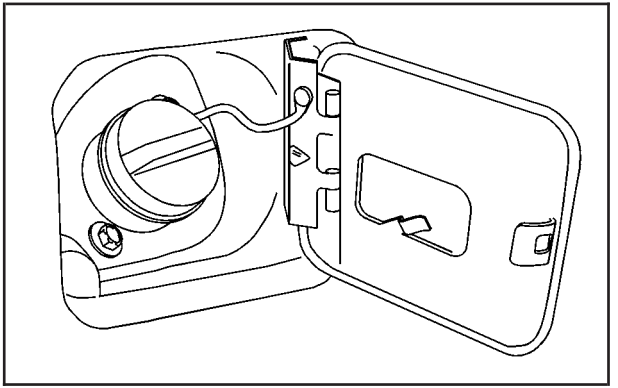


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## Filling Your Tank

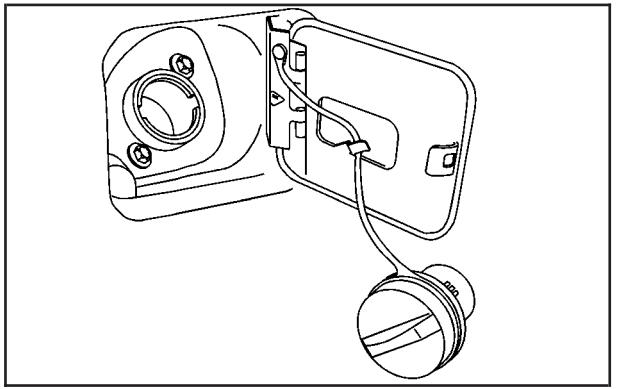
**⚠ CAUTION:**

**Fuel vapor burns violently and a fuel fire can cause bad injuries. To help avoid injuries to you and others, read and follow all the instructions on the pump island. Turn off your engine when you are refueling. Do not smoke if you are near fuel or refueling your vehicle. Keep sparks, flames and smoking materials away from fuel. Do not leave the fuel pump unattended when refueling your vehicle — this is against the law in some places. Keep children away from the fuel pump; never let children pump fuel.**



The tethered fuel cap is located behind a hinged fuel door on the passenger's side of the vehicle.

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While refueling, hang the tethered fuel cap from the hook on the fuel door.

To remove the fuel cap, turn it slowly to the left (counterclockwise). The fuel cap has a spring in it; if you let go of the cap too soon, it will spring back to the right.

**⚠ CAUTION:**

**If you spill fuel and then something ignites it, you could be badly burned. Fuel can spray out on you if you open the fuel cap too quickly. This spray can happen if your tank is nearly full, and is more likely in hot weather. Open the fuel cap slowly and wait for any "hiss" noise to stop. Then unscrew the cap all the way.**

Be careful not to spill fuel. Don't top off or overfill your tank and wait a few seconds after you've finished pumping before you remove the nozzle. Clean fuel from painted surfaces as soon as possible. See *Cleaning the Outside of Your Vehicle on page 5-75*.



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When you put the fuel cap back on, turn it to the right (clockwise) until you hear a clicking sound. Make sure you fully install the cap. The diagnostic system can determine if the fuel cap has been left off or improperly installed. This would allow fuel to evaporate into the atmosphere. See *Malfunction Indicator Lamp on page 3-29*.

**⚠ CAUTION:**

**If a fire starts while you are refueling, do not remove the nozzle. Shut off the flow of fuel by shutting off the pump or by notifying the station attendant. Leave the area immediately.**

***Notice:*** **If you need a new fuel cap, be sure to get the right type. Your dealer can get one for you. If you get the wrong type, it may not fit properly. This may cause your malfunction indicator lamp to light and may damage your fuel tank and emissions system. See *Malfunction Indicator Lamp on page 3-29*.**

## Filling a Portable Fuel Container

**⚠ CAUTION:**

**Never fill a portable fuel container while it is in your vehicle. Static electricity discharge from the container can ignite the gasoline vapor. You can be badly burned and your vehicle damaged if this occurs. To help avoid injury to you and others:**

- **Dispense gasoline only into approved containers.**
- **Do not fill a container while it is inside a vehicle, in a vehicle's trunk, pickup bed or on any surface other than the ground.**
- **Bring the fill nozzle in contact with the inside of the fill opening before operating the nozzle. Contact should be maintained until the filling is complete.**
- **Do not smoke while pumping gasoline.**

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# Checking Things Under the Hood

**⚠ CAUTION:**

**An electric fan under the hood can start up and injure you even when the engine is not running. Keep hands, clothing and tools away from any underhood electric fan.**

**⚠ CAUTION:**

**Things that burn can get on hot engine parts and start a fire. These include liquids like fuel, oil, coolant, brake fluid, windshield washer and other fluids, and plastic or rubber. You or others could be burned. Be careful not to drop or spill things that will burn onto a hot engine.**

## Hood Release

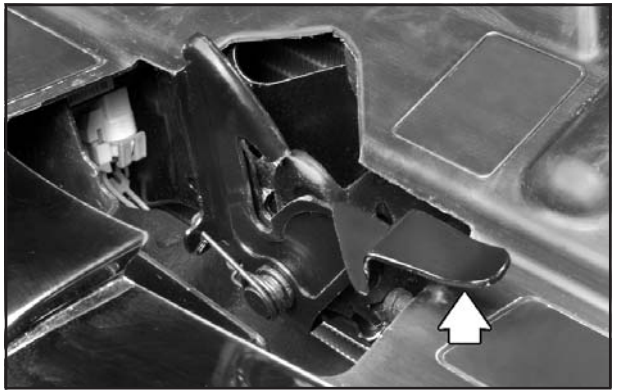
To open the hood, do the following.



1. Pull the handle located inside the vehicle on the driver's side under the instrument panel.



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2. Then go to the front of the vehicle and lift up on the secondary hood release lever. The secondary hood release lever is located near the front center of the hood toward the driver's side.



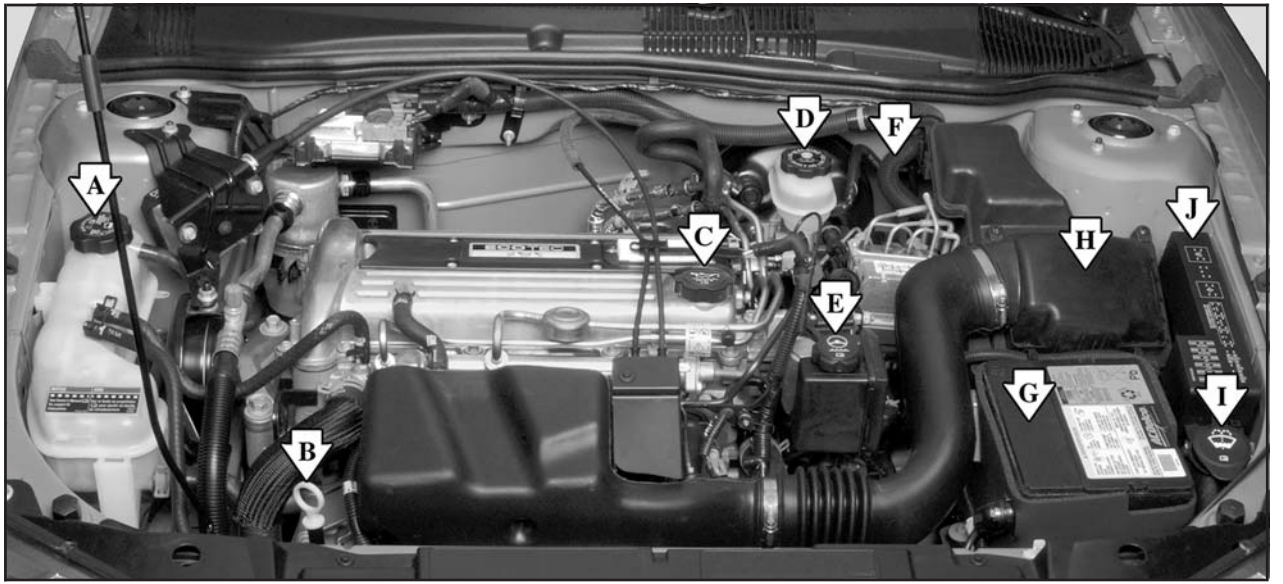
3. Lift the hood, release the hood prop from its retainer and put the hood prop into the slot in the hood marked by an arrow. Use the prop rod sleeve when handling the hood prop.

Before closing the hood, be sure all the filler caps are on properly. Then lift the hood to relieve pressure on the hood prop. Remove the hood prop from the slot in the hood and return the prop to its retainer. Lower the hood 8 to 10 inches (20 to 25 cm) above the vehicle and release it to latch fully. Check to make sure the hood is closed and repeat the process if necessary.

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## Engine Compartment Overview

When you open the hood on the engine, you'll see the following:






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A. Coolant Surge Tank. See *Cooling System on page 5-25*.

B. Engine Oil Dipstick. See “Checking Engine Oil” under *Engine Oil on page 5-13*.

C. Engine Oil Fill Cap. See “When to Add Engine Oil” under *Engine Oil on page 5-13*.

D. Brake Fluid Reservoir. See “Brake Fluid” under *Brakes on page 5-32*.

E. Power Steering Fluid Reservoir. See *Power Steering Fluid on page 5-30*.

F. Clutch Master Cylinder Reservoir (If Equipped) (Not Shown). See *Hydraulic Clutch on page 5-19*.

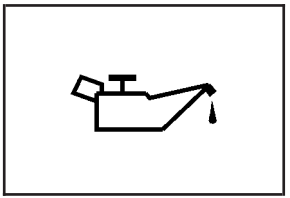
G. Battery. See *Battery on page 5-36*.

H. Engine Air Cleaner/Filter. See *Engine Air Cleaner/Filter on page 5-17*.

I. Windshield Washer Fluid Reservoir. See *Windshield Washer Fluid on page 5-31*.

J. Engine Compartment Fuse Block. See “Engine Compartment Fuse Block” under *Fuses and Circuit Breakers on page 5-81*.

## Engine Oil



If the oil pressure light appears on the instrument cluster, it means you need to check your engine oil level right away.

For more information, see *Oil Pressure Light on page 3-32*.

You should check your engine oil level regularly; this is an added reminder.

### Checking Engine Oil

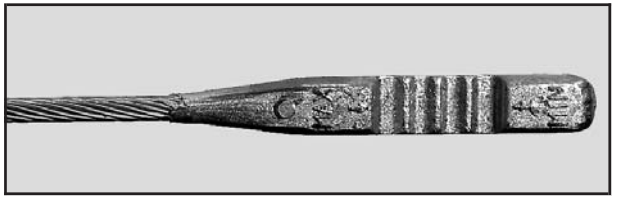
It is a good idea to check your engine oil every time you get fuel. In order to get an accurate reading, the oil must be warm and the vehicle must be on level ground.

The engine oil dipstick handle is a yellow loop. See *Engine Compartment Overview on page 5-12* for the location of the engine oil dipstick.

Turn off the engine and give the oil several minutes to drain back into the oil pan. If you don’t, the oil dipstick might not show the actual level.

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Pull out the dipstick and clean it with a paper towel or cloth, then push it back in all the way. Remove it again, keeping the tip down, and check the level.



## When to Add Engine Oil

If the oil is at or below the MIN mark, then you will need to add at least one quart of oil. But you must use the right kind. This section explains what kind of oil to use. For engine oil crankcase capacity, see *Capacities and Specifications on page 5-85*.

***Notice:*** **Do not add too much oil. If your engine has so much oil that the oil level gets above the upper mark that shows the proper operating range, your engine could be damaged.**




See *Engine Compartment Overview on page 5-12* for the location of the engine oil fill cap.

Be sure to add enough oil to put the level somewhere in the proper operating range. Push the dipstick all the way back in when you are through.

## What Kind of Engine Oil to Use

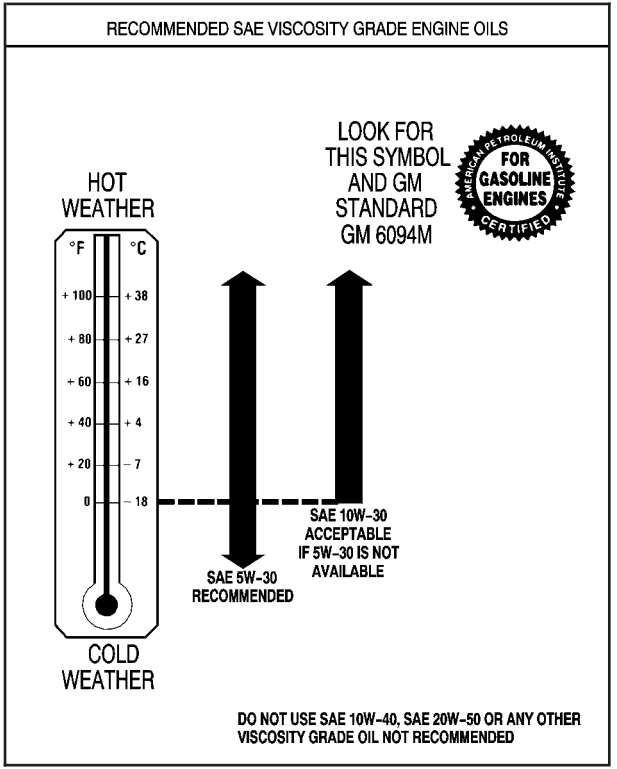
Look for two things:

- GM6094M

  Your vehicle's engine requires oil meeting GM Standard GM6094M. You should look for and use only an oil that meets GM Standard GM6094M.



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- SAE 5W-30

  As shown in the viscosity chart, SAE 5W-30 is best for your vehicle. However, if it is going to be 0°F (–18°C) or above and SAE 5W-30 is not available, you may use SAE 10W-30.

  These numbers on an oil container show its viscosity, or thickness. Do not use other viscosity oils such as SAE 20W-50.




Oils meeting these requirements should also have the starburst symbol on the container. This symbol indicates that the oil has been certified by the American Petroleum Institute (API).

You should look for this information on the oil container, and use *only* those oils that are identified as meeting GM Standard GM6094M and have the starburst symbol on the front of the oil container.

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***Notice:*** **Use only engine oil identified as meeting GM Standard GM6094M and showing the American Petroleum Institute Certified For Gasoline Engines starburst symbol. Failure to use the recommended oil can result in engine damage not covered by your warranty.**

GM Goodwrench® oil meets all the requirements for your vehicle.

If you are in an area of extreme cold, where the temperature falls below –20°F (–29°C), it is recommended that you use either an SAE 5W-30 synthetic oil or an SAE 0W-30 oil. Both will provide easier cold starting and better protection for your engine at extremely low temperatures.

## Engine Oil Additives

Do not add anything to your oil. The recommended oils with the starburst symbol that meet GM Standard GM6094M are all you will need for good performance and engine protection.

## When to Change Engine Oil

If any one of these are true for you, use the short trip/city maintenance schedule:

- Most trips are less than 5 miles (8 km). This is particularly important when outside temperatures are below freezing.
- Most trips include extensive idling (such as frequent driving in stop-and-go traffic).
- You frequently tow a trailer or use a carrier on top of your vehicle.
- The vehicle is used for delivery service, police, taxi or other commercial application.

Driving under these conditions causes engine oil to break down sooner. If any one of these is true for your vehicle, then you need to change your oil and filter every 3,000 miles (5 000 km) or 3 months — whichever occurs first.

If none of them is true, use the long trip/highway maintenance schedule. Change the oil and filter every 7,500 miles (12 500 km) or 12 months — whichever occurs first. Driving a vehicle with a fully warmed engine under highway conditions will cause engine oil to break down slower.

Your vehicle has a unique oil filter element. When installing the filter cap do not exceed 18 lb-ft (25 N•m). Inspect the condition of the O-ring and replace if damaged.

See your dealer for additional information.



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## What to Do with Used Oil

Used engine oil contains certain elements that may be unhealthy for your skin and could even cause cancer. Do not let used oil stay on your skin for very long. Clean your skin and nails with soap and water, or a good hand cleaner. Wash or properly dispose of clothing or rags containing used engine oil. See the manufacturer's warnings about the use and disposal of oil products.

Used oil can be a threat to the environment. If you change your own oil, be sure to drain all the oil from the filter before disposal. Never dispose of oil by putting it in the trash, pouring it on the ground, into sewers, or into streams or bodies of water. Instead, recycle it by taking it to a place that collects used oil. If you have a problem properly disposing of your used oil, ask your dealer, a service station or a local recycling center for help.

# Engine Air Cleaner/Filter




See *Engine Compartment Overview on page 5-12* for the location of the engine air cleaner/filter.

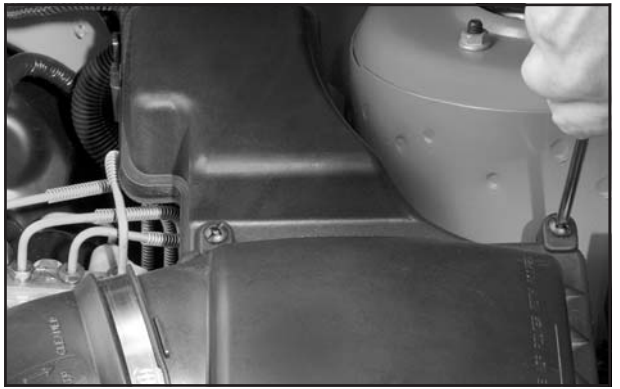
## When to Inspect the Engine Air Cleaner/Filter

Inspect the air cleaner/filter every 15,000 miles (25 000 km) and replace every 30,000 miles (50 000 km). If you are driving in dusty/dirty conditions, inspect the filter at each oil change.

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## How to Inspect the Engine Air Cleaner/Filter

To inspect the air cleaner/filter remove the filter from the vehicle and lightly shake the filter to release loose dust and dirt. If the filter remains caked with dirt, a new filter is required.



To inspect or replace the filter, remove the screws that hold the cover on and lift off the cover. Be sure to reinstall the cover tightly.

**⚠ CAUTION:**

**Operating the engine with the air cleaner/filter off can cause you or others to be burned. The air cleaner not only cleans the air, it helps to stop flame if the engine backfires. If it is not there and the engine backfires, you could be burned. Do not drive with it off, and be careful working on the engine with the air cleaner/ filter off.**

***Notice:*** **If the air cleaner/filter is off, a backfire can cause a damaging engine fire. And, dirt can easily get into your engine, which will damage it. Always have the air cleaner/filter in place when you are driving.**



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## Automatic Transaxle Fluid

It is not necessary to check the transaxle fluid level. A transaxle fluid leak is the only reason for fluid loss. If a leak occurs, take the vehicle to the dealership service department and have it repaired as soon as possible. You may also have your fluid level checked by your dealer or service center when you have your oil changed.

Change both the fluid and filter every 50,000 miles (83 000 km) if the vehicle is mainly driven under one or more of these conditions:

- In heavy city traffic where the outside temperature regularly reaches 90°F (32°C) or higher.
- In hilly or mountainous terrain.
- When doing frequent trailer towing.
- Uses such as found in taxi, police or delivery service.

If you do not use your vehicle under any of these conditions, the fluid and filter do not require changing.

***Notice:*** **Use of automatic transaxle fluid labeled other than DEXRON®-III may damage your vehicle, and the damages may not be covered by your warranty. Always use DEXRON®-III labeled automatic transaxle fluid.**

## Manual Transaxle Fluid

It is not necessary to check the transaxle fluid level. A transaxle fluid leak is the only reason for fluid loss. If a leak occurs, take the vehicle to the dealership service department and have it repaired as soon as possible. You may also have your fluid level checked by your dealer or service center when you have your oil changed. See *Part D: Recommended Fluids and Lubricants on page 6-25* for the proper fluid to use.

## Hydraulic Clutch

The hydraulic clutch linkage in your vehicle is self-adjusting. The master cylinder reservoir is filled with hydraulic fluid.

It is not necessary to regularly check the fluid unless you suspect there is a leak in the system. Adding fluid won't correct a leak.

A fluid loss in this system could indicate a problem. Have the system inspected and repaired.

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## When to Check and What to Use



Refer to the Maintenance Schedule to determine how often you should check the fluid level in your master cylinder reservoir and for the proper fluid. See *Part B: Owner Checks and Services on page 6-18* and *Part D: Recommended Fluids and Lubricants on page 6-25*.

## How to Check and Add Fluid

You do not need to check the fluid level unless you suspect a clutch problem. To check the fluid level, take the cap off. If the fluid reaches the step inside the reservoir, the fluid level is correct. See *Engine Compartment Overview on page 5-12* for more information on location.

# Engine Coolant

The cooling system in your vehicle is filled with DEX-COOL® engine coolant. This coolant is designed to remain in your vehicle for 5 years or 150,000 miles (240 000 km), whichever occurs first, if you add only DEX-COOL® extended life coolant.

The following explains your cooling system and how to add coolant when it is low. If you have a problem with engine overheating, see *Engine Overheating on page 5-23*.

A 50/50 mixture of clean, drinkable water and DEX-COOL® coolant will:

- Give freezing protection down to –34°F (–37°C).
- Give boiling protection up to 265°F (129°C).
- Protect against rust and corrosion.
- Help keep the proper engine temperature.
- Let the warning lights and gages work as they should.



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***Notice:*** **Using coolant other than DEX-COOL® may cause premature engine, heater core or radiator corrosion. In addition, the engine coolant may require changing sooner, at 30,000 miles (50 000 km) or 24 months, whichever occurs first. Any repairs would not be covered by your warranty. Always use DEX-COOL®(silicate-free) coolant in your vehicle.**

## What to Use

Use a mixture of one-half *clean, drinkable water* and one-half DEX-COOL® coolant which will not damage aluminum parts. If you use this coolant mixture, you do not need to add anything else.

**⚠ CAUTION:**

**Adding only plain water to your cooling system can be dangerous. Plain water, or some other liquid such as alcohol, can boil before the proper coolant mixture will. Your**

**CAUTION: (Continued)**

**CAUTION: (Continued)**

**vehicle's coolant warning system is set for the proper coolant mixture. With plain water or the wrong mixture, your engine could get too hot but you would not get the overheat warning. Your engine could catch fire and you or others could be burned. Use a 50/50 mixture of clean, drinkable water and DEX-COOL® coolant.**

***Notice:*** **If you use an improper coolant mixture, your engine could overheat and be badly damaged. The repair cost would not be covered by your warranty. Too much water in the mixture can freeze and crack the engine, radiator, heater core and other parts.**

If you have to add coolant more than four times a year, have your dealer check your cooling system.

***Notice:*** **If you use the proper coolant, you do not have to add extra inhibitors or additives which claim to improve the system. These can be harmful.**

DEP DEALER E-PROCESS

## Checking Coolant

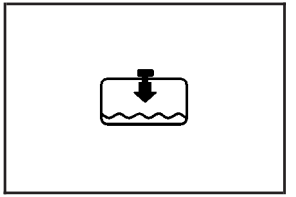


The surge tank is located in the engine compartment on the passenger's side of the vehicle. See *Engine Compartment Overview on page 5-12* for more information on location.

**⚠ CAUTION:**

**Turning the surge tank pressure cap when the engine and radiator are hot can allow steam and scalding liquids to blow out and burn you badly. Never turn the surge tank pressure cap — even a little — when the engine and radiator are hot.**

The vehicle must be on a level surface. When your engine is cold, the coolant level should be at the FULL COLD mark.



If the low coolant light comes on and stays on, it means you are low on engine coolant. See *Low Coolant Warning Light on page 3-29*.

### Adding Coolant

If you need more coolant, add the proper DEX-COOL® coolant mixture *at the surge tank*, but only when the engine is cool. If the surge tank is empty, a special fill procedure is necessary. See *Engine Overheating on page 5-23* for instructions on "How to Add Coolant to the Coolant Surge Tank."

**⚠ CAUTION:**

**You can be burned if you spill coolant on hot engine parts. Coolant contains ethylene glycol, and it will burn if the engine parts are hot enough. Do not spill coolant on a hot engine.**

When replacing the pressure cap, make sure it is hand-tight.



DEP DEALER E-PROCESS

## Coolant Surge Tank Pressure Cap

***Notice:*** **If the pressure cap is not tightly installed, coolant loss and possible engine damage may occur. Be sure the cap is properly and tightly secured.**

## Engine Overheating

You will find a coolant temperature gage and a low coolant warning light on your vehicle's instrument panel. See *Engine Coolant Temperature Gage on page 3-28* and *Low Coolant Warning Light on page 3-29*.

## If Steam Is Coming From Your Engine



**⚠ CAUTION:**

**Steam from an overheated engine can burn you badly, even if you just open the hood. Stay away from the engine if you see or hear steam coming from it. Just turn it off and get everyone away from the vehicle until it cools down. Wait until there is no sign of steam or coolant before you open the hood.**

**If you keep driving when your engine is overheated, the liquids in it can catch fire. You or others could be badly burned. Stop your engine if it overheats, and get out of the vehicle until the engine is cool.**

***Notice:*** **If your engine catches fire because you keep driving with no coolant, your vehicle can be badly damaged. The costly repairs would not be covered by your warranty.**

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## If No Steam Is Coming From Your Engine

An overheat warning, along with a low coolant light, can indicate a serious problem. See *Low Coolant Warning Light on page 3-29*.

If you get an engine overheat warning with no low coolant light, but see or hear no steam, the problem may not be too serious. Sometimes the engine can get a little too hot when you:

- Climb a long hill on a hot day.
- Stop after high-speed driving.
- Idle for long periods in traffic.
- Tow a trailer.

If you get the overheat warning with no sign of steam, try this for a minute or so:

1. In heavy traffic, let the engine idle in NEUTRAL (N) while stopped. If it is safe to do so, pull off the road, shift to PARK (P) or NEUTRAL (N) and let the engine idle.
2. Turn on your heater to full hot at the highest fan speed and open the window as necessary.

If you no longer have the overheat warning, you can drive. Just to be safe, drive slower for about 10 minutes. If the warning doesn't come back on, you can drive normally.

If the warning continues and you have not stopped, pull over, stop, and park your vehicle right away.

If there's still no sign of steam, you can idle the engine for three minutes while you're parked. If you still have the warning, *turn off the engine and get everyone out of the vehicle* until it cools down.

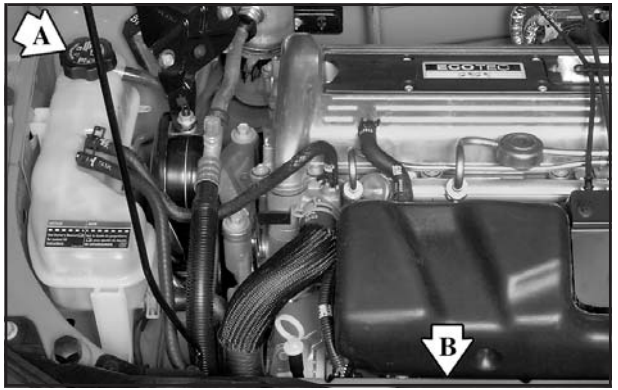
You may decide not to lift the hood but to get service help right away.



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## Cooling System

When you decide it's safe to lift the hood, here's what you'll see:




A. Coolant Surge Tank with Pressure Cap
B. Electric Engine Cooling Fan

**⚠ CAUTION:**

**An electric engine cooling fan under the hood can start up even when the engine is not running and can injure you. Keep hands, clothing and tools away from any underhood electric fan.**

If the coolant inside the coolant surge tank is boiling, don't do anything else until it cools down. The vehicle should be parked on a level surface.

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The coolant level should be at the FULL COLD mark. If it isn't, you may have a leak at the pressure cap or in the radiator hoses, heater hoses, radiator, water pump or somewhere in the cooling system.

If there seems to be no leak, with the engine on, check to see if the electric engine cooling fan is running. If the engine is overheating, the fan should be running. If it isn't, your vehicle needs service.

***Notice:*** **Engine damage from running your engine without coolant is not covered by your warranty.**

***Notice:*** **Using coolant other than DEX-COOL® may cause premature engine, heater core or radiator corrosion. In addition, the engine coolant may require changing sooner, at 30,000 miles (50 000 km) or 24 months, whichever occurs first. Any repairs would not be covered by your warranty. Always use DEX-COOL®(silicate-free) coolant in your vehicle.**

## ⚠ CAUTION:

**Heater and radiator hoses, and other engine parts, can be very hot. Do not touch them. If you do, you can be burned.**

**Do not run the engine if there is a leak. If you run the engine, it could lose all coolant. That could cause an engine fire, and you could be burned. Get any leak fixed before you drive the vehicle.**



DEP DEALER E-PROCESS

## How to Add Coolant to the Coolant Surge Tank

***Notice:*** **This vehicle has a specific coolant fill procedure. Failure to follow this procedure could cause your engine to overheat and be severely damaged.**

If you haven't found a problem yet, check to see if coolant is visible in the surge tank. If coolant is visible but the coolant level isn't at the FULL COLD mark, add a 50/50 mixture of *clean, drinkable water* and DEX-COOL® coolant at the coolant surge tank, but be sure the cooling system, including the coolant surge tank pressure cap, is cool before you do it. See *Engine Coolant on page 5-20* for more information.

If no coolant is visible in the surge tank, add coolant as follows:

**⚠ CAUTION:**

**Steam and scalding liquids from a hot cooling system can blow out and burn you badly. They are under pressure, and if you turn the coolant**

**CAUTION: (Continued)**

**CAUTION: (Continued)**

**surge tank pressure cap — even a little — they can come out at high speed. Never turn the cap when the cooling system, including the coolant surge tank pressure cap, is hot. Wait for the cooling system and coolant surge tank pressure cap to cool if you ever have to turn the pressure cap.**



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DEALER E-PROCESS

## ⚠ CAUTION:

**Adding only plain water to your cooling system can be dangerous. Plain water, or some other liquid such as alcohol, can boil before the proper coolant mixture will. Your vehicle's coolant warning system is set for the proper coolant mixture. With plain water or the wrong mixture, your engine could get too hot but you would not get the overheat warning. Your engine could catch fire and you or others could be burned. Use a 50/50 mixture of clean, drinkable water and DEX-COOL® coolant.**

***Notice:*** **In cold weather, water can freeze and crack the engine, radiator, heater core and other parts. Use the recommended coolant and the proper coolant mixture.**

## ⚠ CAUTION:

**You can be burned if you spill coolant on hot engine parts. Coolant contains ethylene glycol and it will burn if the engine parts are hot enough. Do not spill coolant on a hot engine.**

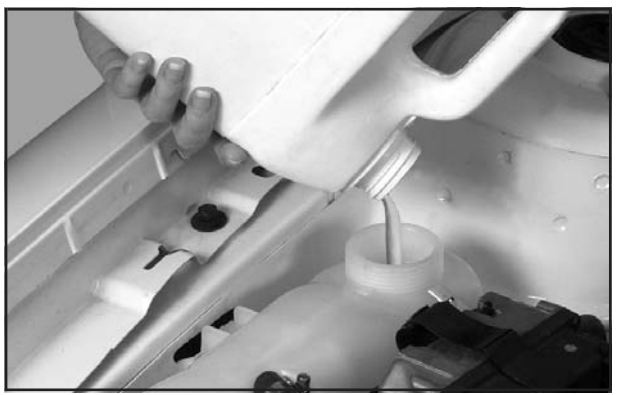
1. Park the vehicle on a level surface. You can remove the coolant surge tank pressure cap when the cooling system, including the coolant surge tank pressure cap and upper radiator hose, is no longer hot. Turn the pressure cap slowly counterclockwise (left) about two or two and one-half turns. If you hear a hiss, wait for that to stop. This will allow any pressure still left to be vented out the discharge hose.



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2. Then keep turning the pressure cap slowly, and remove it.



3. Then fill the coolant surge tank with the proper mixture, to the hash mark on the label. Wait about five minutes, then check to see if the level is below the hash mark. If the level is below the hash mark, add additional coolant to bring the level up to the hash mark. Repeat this procedure until the level remains constant at the hash mark for at least five minutes.



4. With the coolant surge tank pressure cap off, start the engine and let it run until you can feel the upper radiator hose getting hot. Watch out for the engine cooling fan.

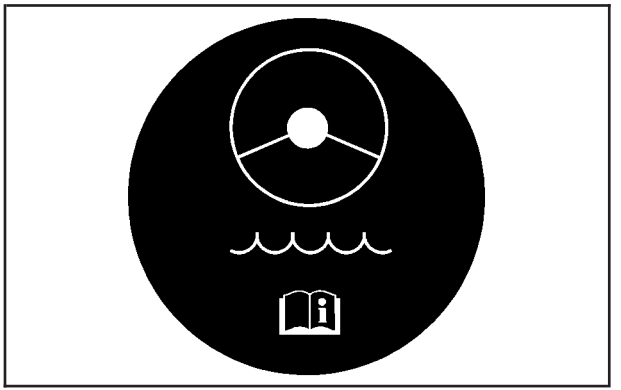
By this time, the coolant level inside the coolant surge tank may be lower. If the level is lower than the FULL COLD mark, add more of the proper mixture to the coolant surge tank until the level reaches the FULL COLD mark.

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5. Then replace the pressure cap. Be sure the pressure cap is hand-tight and fully seated. See your dealer, if necessary.

## Power Steering Fluid



The power steering fluid reservoir is located toward the front of the engine compartment on the driver's side of the vehicle. See *Engine Compartment Overview on page 5-12* for reservoir location.



DEP DEALER E-PROCESS

## When to Check Power Steering Fluid

It is not necessary to regularly check power steering fluid unless you suspect there is a leak in the system or you hear an unusual noise. A fluid loss in this system could indicate a problem. Have the system inspected and repaired.

## How to Check Power Steering Fluid

1. Turn the key off and let the engine compartment cool down.
2. Wipe the cap and the top of the reservoir clean.
3. Unscrew the cap and wipe the dipstick with a clean rag.
4. Replace the cap and completely tighten it.
5. Then remove the cap again and look at the fluid level on the dipstick.

The level should be at the “C” mark. If necessary, add only enough fluid to bring the level up to the mark.

## What to Use

To determine what kind of fluid to use, see *Part D: Recommended Fluids and Lubricants on page 6-25*. Always use the proper fluid. Failure to use the proper fluid can cause leaks and damage hoses and seals.

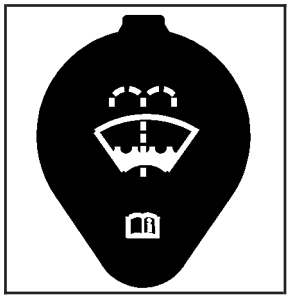
# Windshield Washer Fluid

## What to Use

When you need windshield washer fluid, be sure to read the manufacturer’s instructions before use. If you will be operating your vehicle in an area where the temperature may fall below freezing, use a fluid that has sufficient protection against freezing.

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## Adding Washer Fluid



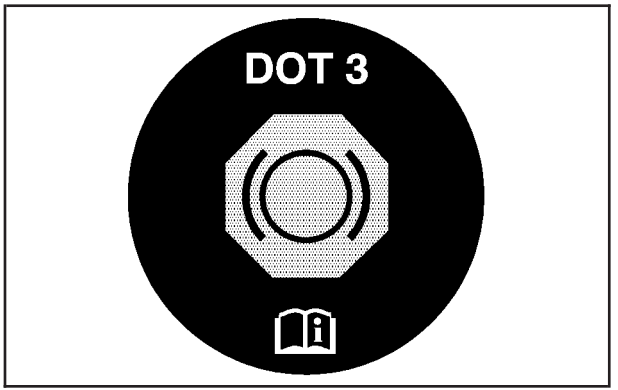
Open the cap with the washer symbol on it. Add washer fluid until the tank is full. See *Engine Compartment Overview on page 5-12* for reservoir location.

***Notice:***

- **When using concentrated washer fluid, follow the manufacturer's instructions for adding water.**
- **Do not mix water with ready-to-use washer fluid. Water can cause the solution to freeze and damage your washer fluid tank and other parts of the washer system. Also, water does not clean as well as washer fluid.**
- **Fill your washer fluid tank only three-quarters full when it is very cold. This allows for expansion if freezing occurs, which could damage the tank if it is completely full.**
- **Do not use engine coolant (antifreeze) in your windshield washer. It can damage your washer system and paint.**

# Brakes

## Brake Fluid




Your brake master cylinder reservoir is filled with DOT-3 brake fluid. See *Engine Compartment Overview on page 5-12* for the location of the reservoir.



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There are only two reasons why the brake fluid level in the reservoir might go down. The first is that the brake fluid goes down to an acceptable level during normal brake lining wear. When new linings are put in, the fluid level goes back up. The other reason is that fluid is leaking out of the brake system. If it is, you should have your brake system fixed, since a leak means that sooner or later your brakes will not work well, or will not work at all.

So, it is not a good idea to “top off” your brake fluid. Adding brake fluid will not correct a leak. If you add fluid when your linings are worn, then you will have too much fluid when you get new brake linings. You should add (or remove) brake fluid, as necessary, only when work is done on the brake hydraulic system.

**⚠ CAUTION:**

**If you have too much brake fluid, it can spill on the engine. The fluid will burn if the engine is hot enough. You or others could be burned, and your vehicle could be damaged. Add brake fluid only when work is done on the brake hydraulic system.**

When your brake fluid falls to a low level, your brake warning light will come on. See *Brake System Warning Light on page 3-25*.

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## What to Add

When you do need brake fluid, use only DOT-3 brake fluid. Use new brake fluid from a sealed container only. See *Part D: Recommended Fluids and Lubricants on page 6-25*.

Always clean the brake fluid reservoir cap and the area around the cap before removing it. This will help keep dirt from entering the reservoir.

**⚠ CAUTION:**

**With the wrong kind of fluid in your brake system, your brakes may not work well, or they may not even work at all. This could cause a crash. Always use the proper brake fluid.**

***Notice:***

- **Using the wrong fluid can badly damage brake system parts. For example, just a few drops of mineral-based oil, such as engine oil, in your brake system can damage brake system parts so badly that they will have to be replaced. Do not let someone put in the wrong kind of fluid.**
- **If you spill brake fluid on your vehicle's painted surfaces, the paint finish can be damaged. Be careful not to spill brake fluid on your vehicle. If you do, wash it off immediately. See *Appearance Care on page 5-72*.**

## Brake Wear

Your vehicle has front disc brakes and rear drum brakes.

Disc brake pads have built-in wear indicators that make a high-pitched warning sound when the brake pads are worn and new pads are needed. The sound may come and go or be heard all the time your vehicle is moving (except when you are pushing on the brake pedal firmly).

**⚠ CAUTION:**

**The brake wear warning sound means that soon your brakes will not work well. That could lead to an accident. When you hear the brake wear warning sound, have your vehicle serviced.**

***Notice:*** **Continuing to drive with worn-out brake pads could result in costly brake repair.**



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Some driving conditions or climates may cause a brake squeal when the brakes are first applied or lightly applied. This does not mean something is wrong with your brakes.

See *Caliper/Knuckle Maintenance Inspection on page 6-24*.

Properly torqued wheel nuts are necessary to help prevent brake pulsation. When tires are rotated, inspect brake pads for wear and evenly tighten wheel nuts in the proper sequence to GM torque specifications.

Your rear drum brakes do not have wear indicators, but if you ever hear a rear brake rubbing noise, have the rear brake linings inspected immediately. Also, the rear brake drums should be removed and inspected each time the tires are removed for rotation or changing. When you have the front brake pads replaced, have the rear brakes inspected, too.

Brake linings should always be replaced as complete axle sets.

See *Brake System Inspection on page 6-24*.

## Brake Pedal Travel

See your dealer if the brake pedal does not return to normal height, or if there is a rapid increase in pedal travel. This could be a sign of brake trouble.

## Brake Adjustment

Every time you make a moderate brake stop, your disc brakes adjust for wear. If you rarely make a moderate or heavier stop, then your brakes might not adjust correctly. If you drive in that way, then — very carefully — make a few moderate brake stops about every 1,000 miles (1 600 km), so your brakes will adjust properly.

If your brake pedal goes down farther than normal, your rear drum brakes may need adjustment. Adjust them by backing up and firmly applying the brakes a few times.

# Replacing Brake System Parts

The braking system on a vehicle is complex. Its many parts have to be of top quality and work well together if the vehicle is to have really good braking. Your vehicle was designed and tested with top-quality GM brake parts. When you replace parts of your braking system — for example, when your brake linings wear down and you need new ones put in — be sure you get new approved GM replacement parts. If you do not, your brakes may no longer work properly. For example, if someone puts in brake linings that are wrong for your vehicle, the balance between your front and rear brakes can change — for the worse. The braking performance you have come to expect can change in many other ways if someone puts in the wrong replacement brake parts.

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## Battery

Your new vehicle comes with a maintenance free ACDelco® battery. When it is time for a new battery, get one that has the replacement number shown on the original battery's label. We recommend an ACDelco® battery. See *Engine Compartment Overview on page 5-12* for battery location.

***Warning:*** Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

## Vehicle Storage

If you are not going to drive your vehicle for 25 days or more, remove the black, negative (–) cable from the battery. This will help keep your battery from running down.

**⚠ CAUTION:**

**Batteries have acid that can burn you and gas that can explode. You can be badly hurt if you are not careful. See *Jump Starting on page 5-36* for tips on working around a battery without getting hurt.**

Contact your dealer to learn how to prepare your vehicle for longer storage periods.

Also, for your audio system, see *Theft-Deterrent Feature (Non RDS Radios) on page 3-67* or *Theft-Deterrent Feature (RDS Radios) on page 3-67*.

## Jump Starting

If your battery has run down, you may want to use another vehicle and some jumper cables to start your vehicle. Be sure to follow the steps below to do it safely.

**⚠ CAUTION:**

**Batteries can hurt you. They can be dangerous because:**

- **They contain acid that can burn you.**
- **They contain gas that can explode or ignite.**
- **They contain enough electricity to burn you.**

**If you do not follow these steps exactly, some or all of these things can hurt you.**

***Notice:*** **Ignoring these steps could result in costly damage to your vehicle that would not be covered by your warranty.**



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**Trying to start your vehicle by pushing or pulling it will not work, and it could damage your vehicle.**

1. Check the other vehicle. It must have a 12-volt battery with a negative ground system.

***Notice:*** **If the other vehicle's system is not a 12-volt system with a negative ground, both vehicles can be damaged. Only use vehicles with 12-volt systems with negative grounds to jump start your vehicle.**

2. Get the vehicles close enough so the jumper cables can reach, but be sure the vehicles aren't touching each other. If they are, it could cause a ground connection you don't want. You wouldn't be able to start your vehicle, and the bad grounding could damage the electrical systems.

   To avoid the possibility of the vehicles rolling, set the parking brake firmly on both vehicles involved in the jump start procedure. Put an automatic transaxle in PARK (P) or a manual transaxle in NEUTRAL before setting the parking brake.

***Notice:*** **If you leave your radio or other accessories on during the jump starting procedure, they could be damaged. The repairs would not be covered by your warranty. Always turn off your radio and other accessories when jump starting your vehicle.**

3. Turn off the ignition on both vehicles. Unplug unnecessary accessories plugged into the cigarette lighter or in the accessory power outlet. Turn off the radio and all lamps that aren't needed. This will avoid sparks and help save both batteries. And it could save your radio!

4. Open the hoods and locate the batteries. Find the positive (+) and negative (–) terminal locations on each vehicle. See *Engine Compartment Overview on page 5-12* for more information on location.

**⚠ CAUTION:**

**An electric fan can start up even when the engine is not running and can injure you. Keep hands, clothing and tools away from any underhood electric fan.**

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**⚠ CAUTION:**

**Using a match near a battery can cause battery gas to explode. People have been hurt doing this, and some have been blinded. Use a flashlight if you need more light.**

**Be sure the battery has enough water. You do not need to add water to the ACDelco® battery installed in your new vehicle. But if a battery has filler caps, be sure the right amount of fluid is there. If it is low, add water to take care of that first. If you do not, explosive gas could be present.**

**Battery fluid contains acid that can burn you. Do not get it on you. If you accidentally get it in your eyes or on your skin, flush the place with water and get medical help immediately.**

**⚠ CAUTION:**

**Fans or other moving engine parts can injure you badly. Keep your hands away from moving parts once the engine is running.**

5. Check that the jumper cables don't have loose or missing insulation. If they do, you could get a shock. The vehicles could be damaged, too.

   Before you connect the cables, here are some basic things you should know. Positive (+) will go to positive (+) or to a remote positive (+) terminal if the vehicle has one. Negative (–) will go to a heavy, unpainted metal engine part or to a remote negative (–) terminal if the vehicle has one.

   Don't connect positive (+) to negative (–) or you'll get a short that would damage the battery and maybe other parts, too. And don't connect the negative (–) cable to the negative (–) terminal on the dead battery because this can cause sparks.



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6. Remove the terminal cover and connect the red positive (+) cable to the positive (+) terminal of the dead battery. Use a remote positive (+) terminal if the vehicle has one.



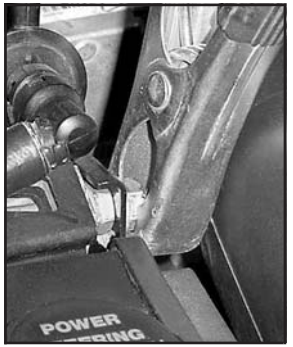
7. Don't let the other end touch metal. Connect it to the positive (+) terminal of the good battery. Use a remote positive (+) terminal if the vehicle has one.



8. Now connect the black negative (–) cable to the negative (–) terminal of the good battery. Use a remote negative (–) terminal if the vehicle has one.

Don't let the other end touch anything until the next step. The other end of the negative (–) cable *doesn't* go to the dead battery. It goes to a heavy, unpainted metal part or to a remote negative (–) terminal on the vehicle with the dead battery.

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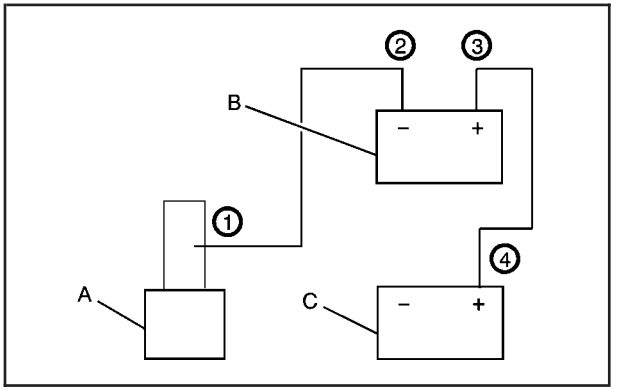



9. Connect the other end of the negative (–) cable at least 18 inches (45 cm) away from the dead battery, but not near engine parts that move. The electrical connection is just as good there, and the chance of sparks getting back to the battery is much less.

10. Now start the vehicle with the good battery and run the engine for a while.

11. Try to start the vehicle that had the dead battery. If it won't start after a few tries, it probably needs service.

***Notice:*** **If the jumper cables are removed in the wrong order, electrical shorting may occur and damage the vehicle. The repairs would not be covered by your warranty. Remove the jumper cables in the correct order, making sure that the cables do not touch each other or other metal.**




**Jumper Cable Removal**

A. Heavy, Unpainted Metal Engine Part

B. Good Battery

C. Dead Battery

To disconnect the jumper cables from both vehicles, do the following:

1. Disconnect the black negative (–) cable from the vehicle that had the dead battery.

2. Disconnect the black negative (–) cable from the vehicle with the good battery.



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3. Disconnect the red positive (+) cable from the vehicle with the good battery.
4. Disconnect the red positive (+) cable from the other vehicle.
5. Return the terminal cover to its original position.

# Bulb Replacement

For the type of bulb to use, see *Replacement Bulbs on page 5-44*.

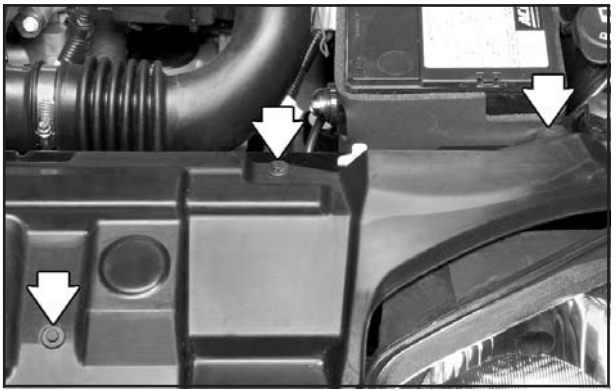
For any bulb changing procedure not listed in this section, contact your dealer.

## Halogen Bulbs

**⚠ CAUTION:**

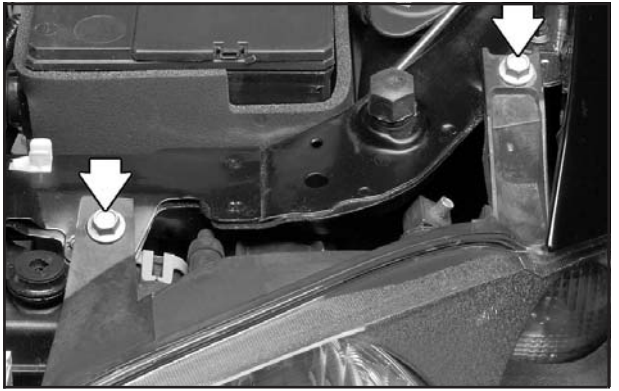
**Halogen bulbs have pressurized gas inside and can burst if you drop or scratch the bulb. You or others could be injured. Be sure to read and follow the instructions on the bulb package.**

## Headlamps



1. Remove the plastic fasteners from the shield. Use a tool to pry up the center of the fastener. Be careful not to break the fasteners that hold the shield in place.

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2. Remove the two bolts from the headlamp assembly. Pull the headlamp assembly up and toward the front of the vehicle to access the bulb assembly.



3. Remove the cover by turning it counterclockwise.



4. Disconnect the bulb base from the socket by lifting the plastic locking tab.

5. Remove the black collar by turning it clockwise.



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6. Remove the bulb by pulling it straight out.

7. Snap a new bulb into the socket.
8. Reinstall the bulb assembly by reversing Steps 1 through 5.

## Front Turn Signal and Parking Lamps

1. Follow Steps 1 and 2 under *Headlamps on page 5-41*.



2. Hold down the tab at the top of the bulb retainer. Twist the retainer one-eighth of a turn counterclockwise and pull the assembly out.

3. Remove the bulb by pulling the bulb straight out.
4. Snap in a new bulb.
5. Reinstall the bulb assembly by reversing Steps 1 and 2.

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## Taillamps and Turn Signal Lamps



1. Remove the fastener which holds down the trunk trim. On vehicles without a convenience net, pry the fastener loose. On vehicles with a convenience net, remove the net and unscrew the fastener. Then pull down the trunk trim.
2. Remove the two nuts from the taillamp.
3. Remove the taillamp from the quarter panel.
4. Remove the taillamp bulb assembly by turning it one-eighth of a turn counterclockwise.
5. To remove the bulb, pull it out of the assembly.
6. Push in a new bulb.
7. Reverse Steps 1 through 4 to reinstall the taillamp assembly.

## Back-Up Lamps

1. Open the trunk lid and locate the back-up lamp assembly on the trunk lid.
2. Gently remove the bulb from the socket by turning it counterclockwise and pulling it out.
3. Replace the bulb in the socket by aligning the tabs and turning the bulb clockwise.

## Replacement Bulbs

For any bulb not listed here contact your dealer.

| Lamps | Bulb Number |
|---|---|
| Back-Up Lamps | 3057 |
| Front Parking/Turn Signal Lamps | 3357K |
| Halogen Headlamps, High/Low Beam | 9007 |
| Tail/Turn Signal Lamps | 3057 |



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# Windshield Wiper Blade Replacement

Windshield wiper blades should be inspected at least twice a year for wear or cracking. See “Wiper Blade Check” under *Part B: Owner Checks and Services on page 6-18* for more information.

Replacement blades come in different types and are removed in different ways. For proper type and length, see *Capacities and Specifications on page 5-85*. Here’s how to remove the Shepherd’s Hook type:



1. Pull the windshield wiper arm away from the windshield.
2. Push the release lever and slide the wiper assembly toward the driver’s side of the vehicle.
3. Install a new blade by reversing Steps 1 and 2.

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# Tires

Your new vehicle comes with high-quality tires made by a leading tire manufacturer. If you ever have questions about your tire warranty and where to obtain service, see your GM Warranty booklet for details. For additional information refer to the tire manufacturer's booklet included with your vehicle's Owner's Manual.

**⚠ CAUTION:**

**Poorly maintained and improperly used tires are dangerous.**

- **Overloading your tires can cause overheating as a result of too much friction. You could have an air-out and a serious accident. See "Loading Your Vehicle" in the Index.**

**CAUTION: (Continued)**

**CAUTION: (Continued)**

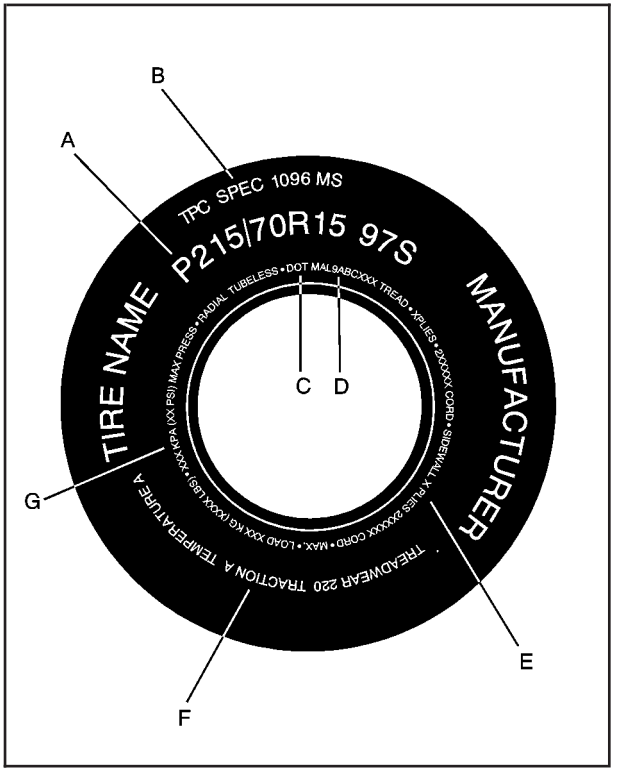
- **Underinflated tires pose the same danger as overloaded tires. The resulting accident could cause serious injury. Check all tires frequently to maintain the recommended pressure. Tire pressure should be checked when your tires are cold.**
- **Overinflated tires are more likely to be cut, punctured or broken by a sudden impact — such as when you hit a pothole. Keep tires at the recommended pressure.**
- **Worn, old tires can cause accidents. If your tread is badly worn, or if your tires have been damaged, replace them.**

## Tire Sidewall Labeling

Useful information about a tire is molded into its sidewall. The examples below show a typical passenger car tire and a compact spare tire sidewall.



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**Passenger Car Tire Example**

**(A) Tire Size:** The tire size code is a combination of letters and numbers used to define a particular tire's width, height, aspect ratio, construction type and service description. See the "Tire Size" illustration later in this section for more detail.

**(B) Tire Performance Criteria Specification (TPC Spec):** Original equipment tires designed to GM's specific tire performance criteria have a TPC specification code molded onto the sidewall. GM's TPC specifications meet or exceed all federal safety guidelines.

**(C) Department of Transportation (DOT):** The Department of Transportation (DOT) code indicates that the tire is in compliance with the U.S. Department of Transportation Motor Vehicle Safety Standards.

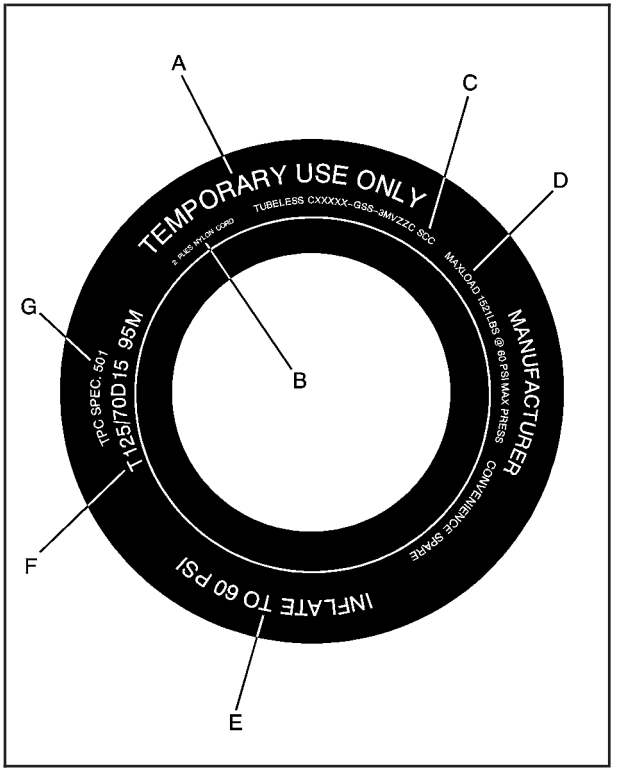
**(D) Tire Identification Number (TIN):** The letters and numbers following DOT code are the Tire Identification Number (TIN). The TIN shows the manufacturer and plant code, tire size, and date the tire was manufactured. The TIN is molded onto both sides of the tire, although only one side may have the date of manufacture.

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**(E) Tire Ply Material:** The type of cord and number of plies in the sidewall and under the tread.

**(F) Uniform Tire Quality Grading (UTQG):** Tire manufacturers are required to grade tires based on three performance factors: treadwear, traction and temperature resistance. For more information see *Uniform Tire Quality Grading on page 5-57*.

**(G) Maximum Cold Inflation Load Limit:** Maximum load that can be carried and the maximum pressure needed to support that load. For more information on recommended tire pressure see *Inflation - Tire Pressure on page 5-53* and *Loading Your Vehicle on page 4-31*.




**Compact Spare Tire Example**



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**(A) Temporary Use Only:** The compact spare tire or temporary use tire has a tread life of approximately 3,000 miles (5 000 km) and should not be driven at speeds over 65 mph (105 km/h). The compact spare tire is for emergency use when a regular road tire has lost air and gone flat. See *Compact Spare Tire on page 5-72* and *If a Tire Goes Flat on page 5-61*.

**(B) Tire Ply Material:** The type of cord and number of plies in the sidewall and under the tread.

**(C) Tire Identification Number (TIN):** The Tire Identification Number (TIN). The TIN shows the manufacturer and plant code, tire size, and date the tire was manufactured. The TIN is molded onto both sides of the tire, although only one side may have the date of manufacture.

**(D) Maximum Cold Inflation Load Limit:** Maximum load that can be carried and the maximum pressure needed to support that load. See *Compact Spare Tire on page 5-72* and *Loading Your Vehicle on page 4-31*.

**(E) Tire Inflation:** The temporary use tire or compact spare tire should be inflated to 60 psi (420 kPa). For more information on tire pressure and inflation see *Inflation - Tire Pressure on page 5-53*.

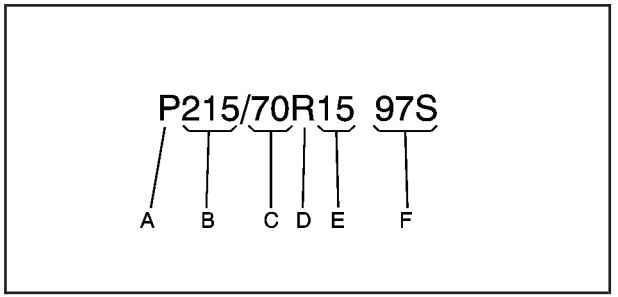
**(F) Tire Size:** A combination of letters and numbers define a tire's width, height, aspect ratio, construction type and service description. The letter "T" as the first character in the tire size means the tire is for temporary use only.

**(G) Tire Performance Criteria Specification (TPC Spec):** Original equipment tires designed to GM's specific tire performance criteria have a TPC specification code molded onto the sidewall. GM's TPC specifications meet or exceed all federal safety guidelines.

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## Tire Size

The following illustration shows an example of a typical passenger car tire size.




**(A) P-Metric Tire:** The United States version of a metric tire sizing system. The letter “P” as the first character in the tire size means a passenger vehicle tire engineered to standards set by the U. S. Tire and Rim Association.

**(B) Tire Width:** The three-digit number indicates the tire section width in millimeters from sidewall to sidewall.

**(C) Aspect Ratio:** A two-digit number that indicates the tire height-to-width measurements. For example, if the tire size aspect ratio is “70,” as shown in item “C” of the illustration, it would mean that the tire’s sidewall is 70% as high as it is wide.

**(D) Construction Code:** A letter code is used to indicate the type of ply construction in the tire. The letter “R” means radial ply construction; the letter “D” means diagonal or bias ply construction; and the letter “B” means belted-bias ply construction.

**(E) Rim Diameter:** Diameter of the wheel in inches.

**(F) Service Description:** These characters represent the load range and the speed rating of a tire. The load range represents the load carrying capacity a tire is certified to carry. The load index can range from 1 to 279. The speed rating is the maximum speed a tire is certified to carry a load. Speed ratings range from “A” to “Z”.

## Tire Terminology and Definitions

**Air Pressure:** The amount of air inside the tire pressing outward on each square inch of the tire. Air pressure is expressed in pounds per square inch (psi) or kilopascal (kPa).

**Accessory Weight:** This means the combined weight of optional accessories. Some examples of optional accessories are, automatic transmission, power steering, power brakes, power windows, power seats, and air conditioning.

**Aspect Ratio:** The relationship of a tire’s height to its width.



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**Belt:** A rubber coated layer of cords that is located between the plies and the tread. Cords may be made from steel or other reinforcing materials.

**Bead:** The tire bead contains steel wires wrapped by steel cords that hold the tire onto the rim.

**Bias Ply Tire:** A pneumatic tire in which the plies are laid at alternate angles less than 90 degrees to the centerline of the tread.

**Cold Inflation Pressure:** The amount of air pressure in a tire, measured in pounds per square inch (psi) before a tire has built up heat from driving. See *Inflation - Tire Pressure on page 5-53*.

**Curb Weight:** This means the weight of a motor vehicle with standard and optional equipment including the maximum capacity of fuel, oil and coolant, but without passengers and cargo.

**DOT Markings:** A code molded into the sidewall of a tire signifying that the tire is in compliance with the U.S. Department of Transportation motor vehicle safety standards. The DOT code includes the Tire Identification Number (TIN), an alphanumeric designator which can also identify the tire manufacturer, production plant, brand and date of production.

**GVWR:** Gross Vehicle Weight Rating, see *Loading Your Vehicle on page 4-31*.

**GAWR FRT:** Gross Axle Weight Rating for the front axle, see *Loading Your Vehicle on page 4-31*.

**GAWR RR:** Gross Axle Weight Rating for the rear axle, see *Loading Your Vehicle on page 4-31*.

**Intended Outboard Sidewall:** The side of an asymmetrical tire that must always face outward when mounted on a vehicle.

**Kilopascal (kPa):** The metric unit for air pressure. There are 6.9 kPa's to one psi.

**Light Truck (LT-Metric) Tire:** A tire used on light duty trucks and some multipurpose passenger vehicles.

**Load Index:** An assigned number ranging from 1 to 279 that corresponds to the load carrying capacity of a tire.

**Maximum Inflation Pressure:** The maximum air pressure to which a cold tire may be inflated. The maximum air pressure is molded onto the sidewall.

**Maximum Load Rating:** The load rating for a tire at the maximum permissible inflation pressure for that tire.

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**Maximum Loaded Vehicle Weight:** The sum of curb weight; accessory weight; vehicle capacity weight; and production options weight.

**Normal Occupant Weight:** The number of occupants a vehicle is designed to seat multiplied by 150 pounds (68 kg). See *Loading Your Vehicle on page 4-31*.

**Occupant Distribution:** Designated seating positions.

**Outward Facing Sidewall:** The side of a asymmetrical tire that has a particular side that faces outward when mounted on a vehicle. The side of the tire that contains a whitewall, bears white lettering or bears manufacturer, brand and or model name molding that is higher or deeper than the same moldings on the other sidewall of the tire.

**Passenger (P-Metric) Tire:** A tire used on passenger cars and some light duty trucks and multipurpose vehicles.

**Recommended Inflation Pressure:** Vehicle manufacturer's recommended tire inflation pressure and shown on the tire placard. See *Inflation - Tire Pressure on page 5-53* and *Loading Your Vehicle on page 4-31*.

**Radial Ply tire:** A pneumatic tire in which the ply cords that extend to the beads are laid at 90 degrees to the centerline of the tread.

**Rim:** A metal support for a tire and upon which the tire beads are seated.

**Sidewall:** The portion of a tire between the tread and the bead.

**Speed Rating:** An alphanumeric code assigned to a tire indicating the maximum speed at which a tire can operate.

**Traction:** The friction between the tire and the road surface. The amount of grip provided.

**Tread:** The portion of a tire that comes into contact with the road.

**Treadwear Indicators:** Narrow bands, sometimes called "wear bars," that show across the tread of a tire when only 2/32 inch of tread remains. See *When It Is Time for New Tires on page 5-55*.



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**UTQGS:** Uniform Tire Quality Grading Standards, a tire information system that provides consumers with ratings for a tire's traction, temperature and treadwear. Ratings are determined by tire manufacturers using government testing procedures. The ratings are molded into the sidewall of the tire. See *Uniform Tire Quality Grading on page 5-57*.

**Vehicle Capacity Weight:** The number of designated seating positions multiplied by 150 lbs. (68 kg) plus the rated cargo load. See *Loading Your Vehicle on page 4-31*.

**Vehicle Maximum Load on the Tire:** Load on an individual tire due to curb weight, accessory weight, occupant weight and cargo weight.

**Vehicle Placard:** A label permanently attached to a vehicle showing the original equipment tire size and recommended inflation pressure. See *Loading Your Vehicle on page 4-31*.

## Inflation - Tire Pressure

The tire and loading information label, shows the correct inflation pressures for your tires when they're cold. "Cold" means your vehicle has been sitting for at least three hours or driven no more than 1 mile (1.6 km). See *Loading Your Vehicle on page 4-31*, for the location of your vehicle's tire and loading information label.

***Notice:*** **Don't let anyone tell you that underinflation or overinflation is all right. It's not. If your tires don't have enough air (underinflation), you can get the following:**

- **Too much flexing**
- **Too much heat**
- **Tire overloading**
- **Bad wear**
- **Bad handling**
- **Bad fuel economy**

**If your tires have too much air (overinflation), you can get the following:**

- **Unusual wear**
- **Bad handling**
- **Rough ride**
- **Needless damage from road hazards**

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## When to Check

Check your tires once a month or more.

Don't forget your compact spare tire. It should be at 60 psi (420 kPa).

## How to Check

Use a good quality pocket-type gage to check tire pressure. You can't tell if your tires are properly inflated simply by looking at them. Radial tires may look properly inflated even when they're underinflated. Check the tire's inflation pressure when the tires are cold. Cold means your vehicle has been sitting for at least three hours or driven no more than 1 mile (1.6 km).

Remove the valve cap from the tire valve stem. Press the tire gage firmly onto the valve to get a pressure measurement. If the cold tire inflation pressure matches the recommended pressure on the Tire and Loading Information label, no further adjustment is necessary. If the inflation pressure is low, add air until you reach the recommended amount.

If you overfill the tire, release air by pushing on the metal stem in the center of the tire valve. Recheck the tire pressure with the tire gage.

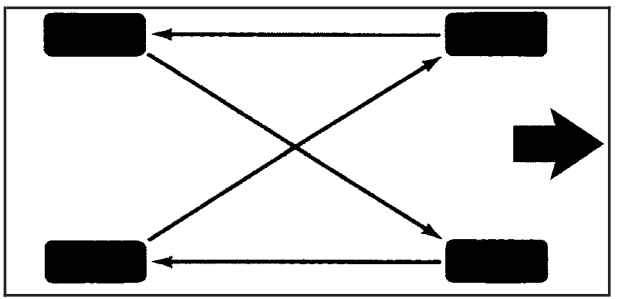
Be sure to put the valve caps back on the valve stems. They help prevent leaks by keeping out dirt and moisture.

## Tire Inspection and Rotation

Tires should be rotated every 5,000 to 8,000 miles (8 000 to 13 000 km).

Any time you notice unusual wear, rotate your tires as soon as possible and check wheel alignment. Also check for damaged tires or wheels. See *When It Is Time for New Tires on page 5-55* and *Wheel Replacement on page 5-58* for more information.

The purpose of regular rotation is to achieve more uniform wear for all tires on the vehicle. The first rotation is the most important. See *Part A: Scheduled Maintenance Services on page 6-4*, for scheduled rotation intervals.



When rotating your tires, always use the correct rotation pattern shown here.



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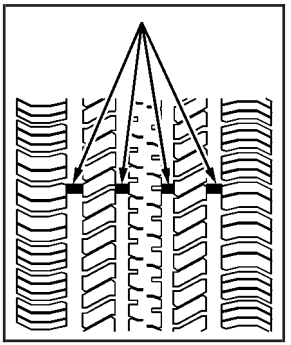
Don't include the compact spare tire in your tire rotation.

After the tires have been rotated, adjust the front and rear inflation pressures as shown on the Tire and Loading Information label. Make certain that all wheel nuts are properly tightened. See "Wheel Nut Torque" under *Capacities and Specifications on page 5-85*.

**⚠ CAUTION:**

**Rust or dirt on a wheel, or on the parts to which it is fastened, can make wheel nuts become loose after a time. The wheel could come off and cause an accident. When you change a wheel, remove any rust or dirt from places where the wheel attaches to the vehicle. In an emergency, you can use a cloth or a paper towel to do this; but be sure to use a scraper or wire brush later, if you need to, to get all the rust or dirt off. See "Changing a Flat Tire" in the Index.**

## When It Is Time for New Tires



One way to tell when it's time for new tires is to check the treadwear indicators, which will appear when your tires have only 1/16 inch (1.6 mm) or less of tread remaining.

You need a new tire if any of the following statements are true:

- You can see the indicators at three or more places around the tire.
- You can see cord or fabric showing through the tire's rubber.
- The tread or sidewall is cracked, cut or snagged deep enough to show cord or fabric.
- The tire has a bump, bulge or split.
- The tire has a puncture, cut or other damage that can't be repaired well because of the size or location of the damage.

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## Buying New Tires

To find out what kind and size of tires your vehicle needs, look at the tire and loading information label. For more information about this label and its location on your vehicle, see *Loading Your Vehicle on page 4-31*.

The tires installed on your vehicle when it was new had a Tire Performance Criteria Specification (TPC Spec) number on each tire's sidewall. When you get new tires, GM recommends that you get tires with that same TPC Spec number. That way your vehicle will continue to have tires that are designed to give proper endurance, handling, speed rating, load range, traction, ride and other things during normal service on your vehicle. If your tires have an all-season tread design, the TPC number will be followed by an "MS" (for mud and snow).

If you ever replace your tires with those not having a TPC Spec number, make sure they are the same size, load range, speed rating and construction type (bias, bias-belted or radial) as your original tires.

**⚠ CAUTION:**

**Mixing tires could cause you to lose control while driving. If you mix tires of different sizes or types (radial and bias-belted tires), the vehicle may not handle properly, and you could have a crash. Using tires of different sizes may also cause damage to your vehicle. Be sure to use the same size and type tires on all wheels. It's all right to drive with your compact spare temporarily, it was developed for use on your vehicle. See "Compact Spare Tire" in the index.**

**⚠ CAUTION:**

**If you use bias-ply tires on your vehicle, the wheel rim flanges could develop cracks after many miles of driving. A tire and/or wheel could fail suddenly, causing a crash. Use only radial-ply tires with the wheels on your vehicle.**



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## Uniform Tire Quality Grading

Quality grades can be found where applicable on the tire sidewall between tread shoulder and maximum section width. For example:

### Treadwear 200 Traction AA Temperature A

The following information relates to the system developed by the United States National Highway Traffic Safety Administration, which grades tires by treadwear, traction and temperature performance. (This applies only to vehicles sold in the United States.) The grades are molded on the sidewalls of most passenger car tires. The Uniform Tire Quality Grading system does not apply to deep tread, winter-type snow tires, space-saver or temporary use spare tires, tires with nominal rim diameters of 10 to 12 inches (25 to 30 cm), or to some limited-production tires.

While the tires available on General Motors passenger cars and light trucks may vary with respect to these grades, they must also conform to federal safety requirements and additional General Motors Tire Performance Criteria (TPC) standards.

### Treadwear

The treadwear grade is a comparative rating based on the wear rate of the tire when tested under controlled conditions on a specified government test course. For example, a tire graded 150 would wear one and a half (1.5) times as well on the government course as a tire graded 100. The relative performance of tires depends upon the actual conditions of their use, however, and may depart significantly from the norm due to variations in driving habits, service practices and differences in road characteristics and climate.

### Traction – AA, A, B, C

The traction grades, from highest to lowest, are AA, A, B, and C. Those grades represent the tire's ability to stop on wet pavement as measured under controlled conditions on specified government test surfaces of asphalt and concrete. A tire marked C may have poor traction performance. Warning: The traction grade assigned to this tire is based on straight-ahead braking traction tests, and does not include acceleration, cornering, hydroplaning, or peak traction characteristics.

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### Temperature – A, B, C

The temperature grades are A (the highest), B, and C, representing the tire's resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel. Sustained high temperature can cause the material of the tire to degenerate and reduce tire life, and excessive temperature can lead to sudden tire failure. The grade C corresponds to a level of performance which all passenger car tires must meet under the Federal Motor Vehicle Safety Standard No. 109. Grades B and A represent higher levels of performance on the laboratory test wheel than the minimum required by law.

Warning: The temperature grade for this tire is established for a tire that is properly inflated and not overloaded. Excessive speed, underinflation, or excessive loading, either separately or in combination, can cause heat buildup and possible tire failure.

## Wheel Alignment and Tire Balance

The wheels on your vehicle were aligned and balanced carefully at the factory to give you the longest tire life and best overall performance.

Scheduled wheel alignment and wheel balancing are not needed. However, if you notice unusual tire wear or your vehicle pulling one way or the other, the alignment may need to be reset. If you notice your vehicle vibrating when driving on a smooth road, your wheels may need to be rebalanced.

## Wheel Replacement

Replace any wheel that is bent, cracked or badly rusted or corroded. If wheel nuts keep coming loose, the wheel, wheel bolts and wheel nuts should be replaced. If the wheel leaks air, replace it (except some aluminum wheels, which can sometimes be repaired). See your dealer if any of these conditions exist.

Your dealer will know the kind of wheel you need.

Each new wheel should have the same load-carrying capacity, diameter, width, offset and be mounted the same way as the one it replaces.

If you need to replace any of your wheels, wheel bolts or wheel nuts, replace them only with new GM original equipment parts. This way, you will be sure to have the right wheel, wheel bolts and wheel nuts for your vehicle.



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**⚠ CAUTION:**

**Using the wrong replacement wheels, wheel bolts or wheel nuts on your vehicle can be dangerous. It could affect the braking and handling of your vehicle, make your tires lose air and make you lose control. You could have a collision in which you or others could be injured. Always use the correct wheel, wheel bolts and wheel nuts for replacement.**

***Notice:*** **The wrong wheel can also cause problems with bearing life, brake cooling, speedometer or odometer calibration, headlamp aim, bumper height, vehicle ground clearance and tire or tire chain clearance to the body and chassis.**

See *Changing a Flat Tire on page 5-62* for more information.

## Used Replacement Wheels

**⚠ CAUTION:**

**Putting a used wheel on your vehicle is dangerous. You can't know how it's been used or how far it's been driven. It could fail suddenly and cause a crash. If you have to replace a wheel, use a new GM original equipment wheel.**

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## Tire Chains

**⚠ CAUTION:**

**If your vehicle has P195/65R15 or P205/55R16 size tires, don't use tire chains, there's not enough clearance.**

**Tire chains used on a vehicle without the proper amount of clearance can cause damage to the brakes, suspension or other vehicle parts. The area damaged by the tire chains could cause you to lose control of your vehicle and you or others may be injured in a crash.**

**Use another type of traction device only if its manufacturer recommends it for use on your vehicle and tire size combination and road**

**CAUTION: (Continued)**

**CAUTION: (Continued)**

**conditions. Follow that manufacturer's instructions. To help avoid damage to your vehicle, drive slowly, readjust or remove the device if it's contacting your vehicle, and don't spin your wheels.**

**If you do find traction devices that will fit, install them on the front tires.**

***Notice:*** **If your vehicle has a tire size other than P195/65R15 or P205/55R16 size tires, use tire chains only where legal and only when you must. Use only SAE Class "S" type chains that are the proper size for your tires. Install them on the front tires and tighten them as tightly as possible with the ends securely fastened. Drive slowly and follow the chain manufacturer's instructions. If you can hear the chains contacting your vehicle, stop and retighten them. If the contact continues, slow down until it stops. Driving too fast or spinning the wheels with chains on will damage your vehicle.**



DEP DEALER E-PROCESS

## If a Tire Goes Flat

It's unusual for a tire to "blowout" while you're driving, especially if you maintain your tires properly. If air goes out of a tire, it's much more likely to leak out slowly. But if you should ever have a "blowout," here are a few tips about what to expect and what to do:

If a front tire fails, the flat tire will create a drag that pulls the vehicle toward that side. Take your foot off the accelerator pedal and grip the steering wheel firmly. Steer to maintain lane position, and then gently brake to a stop well out of the traffic lane.

A rear blowout, particularly on a curve, acts much like a skid and may require the same correction you'd use in a skid. In any rear blowout, remove your foot from the accelerator pedal. Get the vehicle under control by steering the way you want the vehicle to go. It may be very bumpy and noisy, but you can still steer. Gently brake to a stop, well off the road if possible.

**⚠ CAUTION:**

**Lifting a vehicle and getting under it to do maintenance or repairs is dangerous without the appropriate safety equipment and training. The jack provided with your vehicle is designed only for changing a flat tire. If it is used for anything else, you or others could be badly injured or killed if the vehicle slips off the jack. Use the jack provided with your vehicle only for changing a flat tire.**

If a tire goes flat, the next part shows how to use your jacking equipment to change a flat tire safely.

DEP
DEALER E-PROCESS

## Changing a Flat Tire

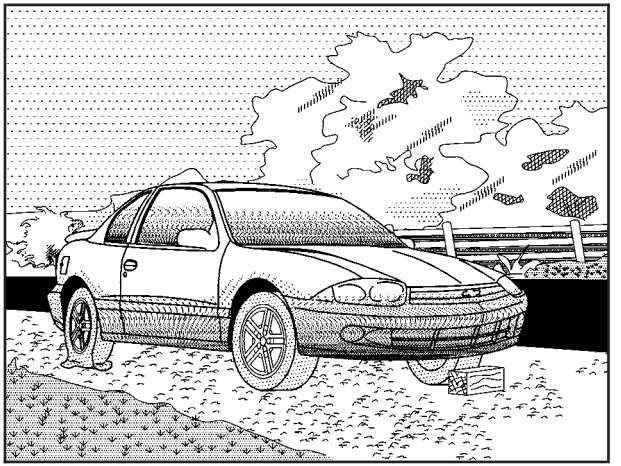
If a tire goes flat, avoid further tire and wheel damage by driving slowly to a level place. Turn on your hazard warning flashers.

### ⚠ CAUTION:

**Changing a tire can cause an injury. The vehicle can slip off the jack and roll over you or other people. You and they could be badly injured. Find a level place to change your tire. To help prevent the vehicle from moving:**

1. **Set the parking brake firmly.**
2. **Put an automatic transaxle shift lever in PARK (P), or shift a manual transaxle to FIRST (1) or REVERSE (R).**
3. **Turn off the engine.**

**To be even more certain the vehicle won't move, you can put blocks at the front and rear of the tire farthest away from the one being changed. That would be the tire on the other side of the vehicle, at the opposite end.**



The following steps will tell you how to use the jack and change a tire.



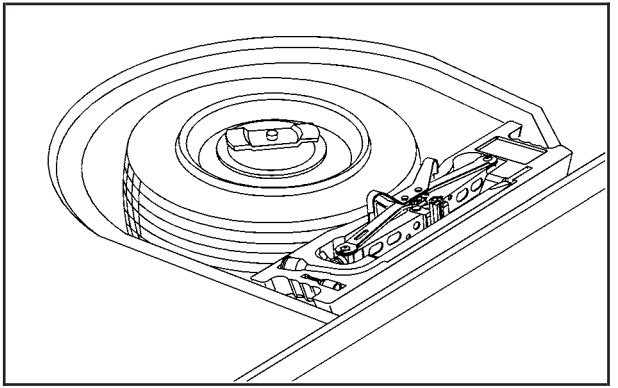
DEP DEALER E-PROCESS

## Removing the Spare Tire and Tools




The equipment you'll need is located in the trunk.

1. Turn the center retainer nut on the compact spare tire cover counterclockwise to remove it.



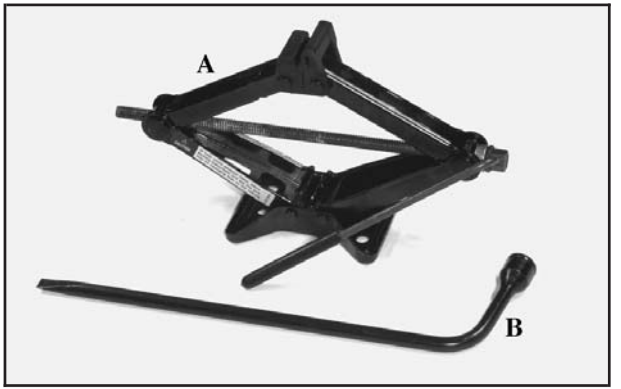
2. Lift and remove the cover. See *Compact Spare Tire on page 5-72* for more information about the compact spare tire.

DEP
DEALER E-PROCESS



3. Turn the wing bolt counterclockwise and remove it. Then lift off the adapter and remove the compact spare tire.

4. Your vehicle's jack and wheel wrench are stored in a foam tray. Remove the jack and wheel wrench from the trunk. Remove the band around the jack.




The tools you'll be using include the jack (A) and wheel wrench (B).



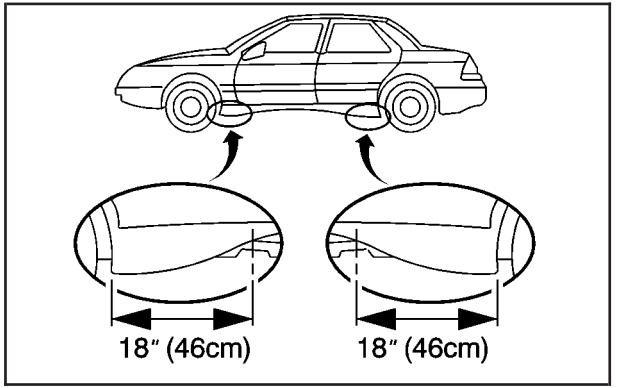
DEP
DEALER E-PROCESS

## Removing the Flat Tire and Installing the Spare Tire



1. If your vehicle is equipped with wheel covers, use the wheel wrench to begin loosening the plastic wheel nut caps. Then you can finish loosening them with your fingers. Using the flat end of the wheel wrench, pry along the edge of the wheel cover until it comes off.
2. Use the wheel wrench to loosen all the wheel nuts. Don't remove them yet.

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DEALER E-PROCESS




3. Near each wheel well is a notch in the frame which the jack head fits in. The front notch is 9 inches (23 cm) back from the front wheel well. The rear notch is 8 inches (20 cm) forward from the rear wheel well. As is shown in the diagram above, if your vehicle has flared side moldings, both front and rear notches are 18 inches (46 cm) from the wheel wells.

   Position the jack and raise the jack head until it fits firmly into the notch in the vehicle's frame nearest the flat tire. Put the compact spare tire near you.

**⚠ CAUTION:**

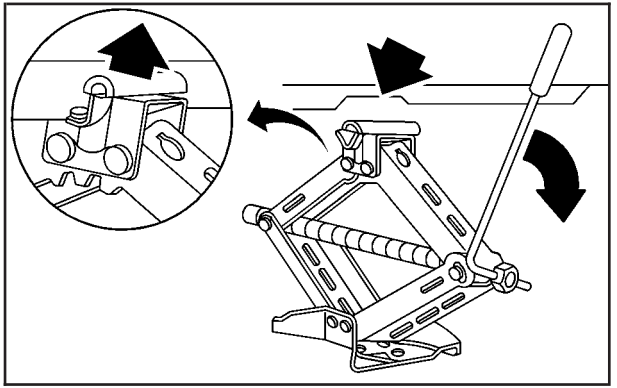
**Getting under a vehicle when it is jacked up is dangerous. If the vehicle slips off the jack you could be badly injured or killed. Never get under a vehicle when it is supported only by a jack.**

**⚠ CAUTION:**

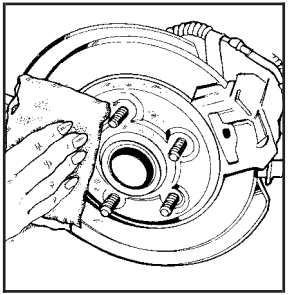
**Raising your vehicle with the jack improperly positioned can damage the vehicle and even make the vehicle fall. To help avoid personal injury and vehicle damage, be sure to fit the jack lift head into the proper location before raising the vehicle.**



DEP DEALER E-PROCESS



4. Raise the vehicle by turning the jack handle clockwise. Raise the vehicle far enough off the ground so there is enough room for the compact spare tire to fit underneath the wheel well.
5. Remove all of the wheel nuts.



6. Remove any rust or dirt from the wheel bolts, mounting surfaces and spare wheel.

## ⚠ CAUTION:

**Rust or dirt on the wheel, or on the parts to which it is fastened, can make the wheel nuts become loose after a time. The wheel could come off and cause an accident. When you change a wheel, remove any rust or dirt from the places where the wheel attaches to the vehicle. In an emergency, you can use a cloth or a paper towel to do this; but be sure to use a scraper or wire brush later, if you need to, to get all the rust or dirt off.**

DEP
DEALER E-PROCESS

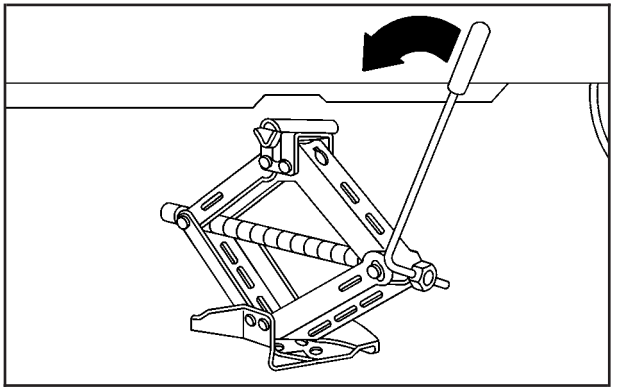
## ⚠ CAUTION:

**Never use oil or grease on studs or nuts. If you do, the nuts might come loose. Your wheel could fall off, causing a serious accident.**

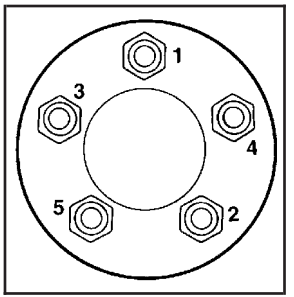
7. Place the compact spare tire on the wheel-mounting surface.



8. Reinstall the wheel nuts with the rounded end of the nuts toward the wheel. Tighten each nut by hand until the wheel is held against the hub.



9. Lower the vehicle by turning the jack handle counterclockwise. Lower the jack completely.




10. Tighten the wheel nuts firmly in a crisscross sequence, as shown.



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DEALER E-PROCESS

**⚠ CAUTION:**

**Incorrect wheel nuts or improperly tightened wheel nuts can cause the wheel to come loose and even come off. This could lead to an accident. Be sure to use the correct wheel nuts. If you have to replace them, be sure to get new GM original equipment wheel nuts. Stop somewhere as soon as you can and have the nuts tightened with a torque wrench to the proper torque specification. See "Capacities and Specifications" in the Index for wheel nut torque specification.**

***Notice:*** **Improperly tightened wheel nuts can lead to brake pulsation and rotor damage. To avoid expensive brake repairs, evenly tighten the wheel nuts in the proper sequence and to the proper torque specification. See "Capacities and Specifications" in the index for the wheel nut torque specification.**

Don't try to put a wheel cover on your compact spare tire. It won't fit. Store the wheel cover in the trunk until you have the flat tire repaired or replaced.

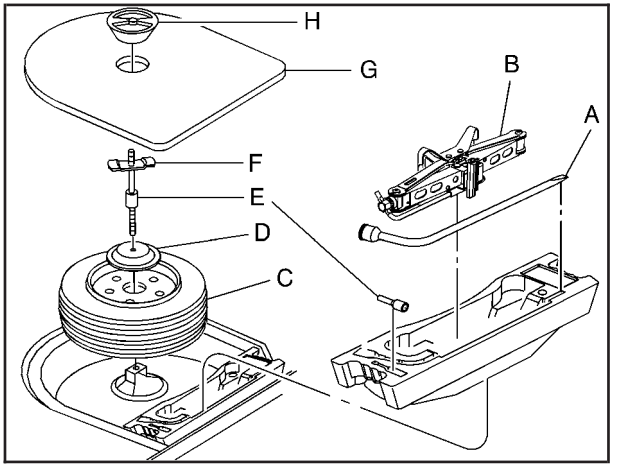
***Notice:*** **Wheel covers will not fit on your compact spare. If you try to put a wheel cover on the compact spare, you could damage the cover or the spare.**

DEP DEALER E-PROCESS

## Storing the Flat Tire and Tools

**⚠ CAUTION:**

**Storing a jack, a tire, or other equipment in the passenger compartment of the vehicle could cause injury. In a sudden stop or collision, loose equipment could strike someone. Store all these in the proper place.**




A. Wrench
B. Jack
C. Flat Road Tire
D. Adapter
E. Extension
F. Wing Bolt (Extension Installed)
G. Cover
H. Nut

Store the flat tire in the compact spare tire compartment and secure the adapter, extension (aluminum wheel only) and wing bolt. Store the jack and wheel wrench in the foam tray.



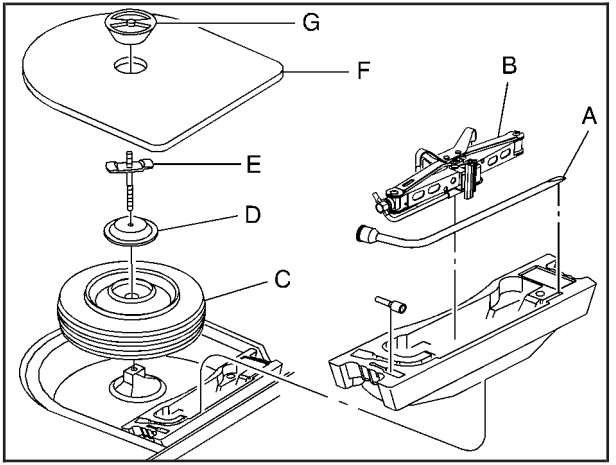
DEP DEALER E-PROCESS

## Storing the Spare Tire and Tools

**⚠ CAUTION:**

**Storing a jack, a tire, or other equipment in the passenger compartment of the vehicle could cause injury. In a sudden stop or collision, loose equipment could strike someone. Store all these in the proper place.**

The compact spare tire is for temporary use only. Replace the compact spare tire with a full-size tire as soon as you can. See *Compact Spare Tire on page 5-72*. See the storage instructions label to replace your compact spare tire into your trunk properly.




A. Wrench
B. Jack
C. Compact Spare Tire
D. Adapter
E. Wing Bolt
F. Cover
G. Nut

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DEALER E-PROCESS

## Compact Spare Tire

Although the compact spare tire was fully inflated when your vehicle was new, it can lose air after a time. Check the inflation pressure regularly. It should be 60 psi (420 kPa).

After installing the compact spare tire on your vehicle, you should stop as soon as possible and make sure your compact spare tire is correctly inflated. The compact spare tire is made to perform well at speeds up to 65 mph (105 km/h) for distances up to 3,000 miles (5 000 km), so you can finish your trip and have your full-size tire repaired or replaced where you want. Of course, it's best to replace your spare with a full-size tire as soon as you can. Your spare will last longer and be in good shape in case you need it again.

***Notice:*** **When the compact spare is installed, don't take your vehicle through an automatic car wash with guide rails. The compact spare can get caught on the rails. That can damage the tire and wheel, and maybe other parts of your vehicle.**

Don't use your compact spare tire on other vehicles.

And don't mix your compact spare tire or wheel with other wheels or tires. They won't fit. Keep your compact spare tire and its wheel together.

***Notice:*** **Tire chains won't fit your compact spare. Using them can damage your vehicle and can damage the chains too. Don't use tire chains on your compact spare.**

# Appearance Care

Remember, cleaning products can be hazardous. Some are toxic. Others can burst into flames if you strike a match or get them on a hot part of the vehicle. Some are dangerous if you breathe their fumes in a closed space. When you use anything from a container to clean your vehicle, be sure to follow the manufacturer's warnings and instructions. And always open your doors or windows when you are cleaning the inside.

Never use these to clean your vehicle:

- Gasoline
- Benzene
- Naphtha
- Carbon Tetrachloride
- Acetone
- Paint Thinner
- Turpentine
- Lacquer Thinner
- Nail Polish Remover

They can all be hazardous — some more than others — and they can all damage your vehicle, too.



DEP DEALER E-PROCESS

Do not use any of these unless this manual says you can. In many uses, these will damage your vehicle:

- Alcohol
- Laundry Soap
- Bleach
- Reducing Agents

## Cleaning the Inside of Your Vehicle

Use a vacuum cleaner often to get rid of dust and loose dirt. Wipe vinyl, leather, plastic and painted surfaces with a clean, damp cloth.

### Cleaning Fabric/Carpet

Your dealer has cleaners for the cleaning of fabric and carpet. They will clean normal spots and stains very well.

You can get GM-approved cleaning products from your dealer. See *Vehicle Care/Appearance Materials on page 5-78*.

Here are some cleaning tips:

- Always read the instructions on the cleaner label.
- Clean up stains as soon as you can — before they set.
- Carefully scrape off any excess stain.
- Use a clean cloth or sponge, and change to a clean area often. A soft brush may be used if stains are stubborn.
- If a ring forms on fabric after spot cleaning, clean the entire area immediately or it will set.

### Using Cleaner on Fabric

1. Vacuum and brush the area to remove any loose dirt.
2. Always clean a whole trim panel or section. Mask surrounding trim along stitch or welt lines.
3. Follow the directions on the container label.
4. Apply cleaner with a clean sponge. Do not saturate the material and do not rub it roughly.
5. As soon as you have cleaned the section, use a sponge to remove any excess cleaner.
6. Wipe cleaned area with a clean, water-dampened towel or cloth.
7. Wipe with a clean cloth and let dry.

DEP DEALER E-PROCESS

## Special Fabric Cleaning Problems

Stains caused by such things as catsup, coffee (black), egg, fruit, fruit juice, milk, soft drinks, vomit, urine and blood can be removed as follows:

1. Carefully scrape off excess stain, then sponge the soiled area with cool water.
2. If a stain remains, follow the cleaner instructions described earlier.
3. If an odor lingers after cleaning vomit or urine, treat the area with a water/baking soda solution: 1 teaspoon (5 ml) of baking soda to 1 cup (250 ml) of lukewarm water.
4. Let dry.

Stains caused by candy, ice cream, mayonnaise, chili sauce and unknown stains can be removed as follows:

1. Carefully scrape off excess stain.
2. First, clean with cool water and allow to dry completely.
3. If a stain remains, follow the cleaner instructions described earlier.

## Cleaning Vinyl

Use warm water and a clean cloth.

- Rub with a clean, damp cloth to remove dirt. You may have to do this more than once.
- Things like tar, asphalt and shoe polish will stain if you do not get them off quickly. Use a clean cloth and vinyl cleaner. See your dealer for this product.

## Cleaning the Top of the Instrument Panel

Use only mild soap and water to clean the top surfaces of the instrument panel. Sprays containing silicones or waxes may cause annoying reflections in the windshield and even make it difficult to see through the windshield under certain conditions.

## Cleaning Interior Plastic Components

Use only a mild soap and water solution on a soft cloth or sponge. Commercial cleaners may affect the surface finish.



DEP DEALER E-PROCESS

## Cleaning Glass Surfaces

Glass should be cleaned often. GM Glass Cleaner or a liquid household glass cleaner will remove normal tobacco smoke and dust films on interior glass. See *Vehicle Care/Appearance Materials on page 5-78*.

***Notice:*** **If you use abrasive cleaners when cleaning glass surfaces on your vehicle, you could scratch the glass and/or cause damage to the rear window defogger and the integrated radio antenna. When cleaning the glass on your vehicle, use only a soft cloth and glass cleaner.**

## Care of Safety Belts

Keep belts clean and dry.

> **⚠ CAUTION:**
>
> **Do not bleach or dye safety belts. If you do, it may severely weaken them. In a crash, they might not be able to provide adequate protection. Clean safety belts only with mild soap and lukewarm water.**

## Weatherstrips

Silicone grease on weatherstrips will make them last longer, seal better, and not stick or squeak. Apply silicone grease with a clean cloth at least every six months. During very cold, damp weather more frequent application may be required. See *Part D: Recommended Fluids and Lubricants on page 6-25*.

## Cleaning the Outside of Your Vehicle

The paint finish on your vehicle provides beauty, depth of color, gloss retention and durability.

### Washing Your Vehicle

The best way to preserve your vehicle's finish is to keep it clean by washing it often with lukewarm or cold water.

Do not wash your vehicle in the direct rays of the sun. Use a car washing soap. Do not use strong soaps or chemical detergents. Be sure to rinse the vehicle well, removing all soap residue completely. You can get GM-approved cleaning products from your dealer. See *Vehicle Care/Appearance Materials on page 5-78*. Do not use cleaning agents that are petroleum based, or that contain acid or abrasives.

DEP DEALER E-PROCESS

All cleaning agents should be flushed promptly and not allowed to dry on the surface, or they could stain. Dry the finish with a soft, clean chamois or an all-cotton towel to avoid surface scratches and water spotting.

High pressure car washes may cause water to enter your vehicle.

## Cleaning Exterior Lamps/Lenses

Use only lukewarm or cold water, a soft cloth and a car washing soap to clean exterior lamps and lenses. Follow instructions under “Washing Your Vehicle.”

## Finish Care

Occasional waxing or mild polishing of your vehicle by hand may be necessary to remove residue from the paint finish. You can get GM-approved cleaning products from your dealer. See *Vehicle Care/Appearance Materials on page 5-78*.

Your vehicle has a “basecoat/clearcoat” paint finish. The clearcoat gives more depth and gloss to the colored basecoat. Always use waxes and polishes that are non-abrasive and made for a basecoat/clearcoat paint finish.

***Notice:*** **Machine compounding or aggressive polishing on a basecoat/clearcoat paint finish may damage it. Use only non-abrasive waxes and polishes that are made for a basecoat/clearcoat paint finish on your vehicle.**

Foreign materials such as calcium chloride and other salts, ice melting agents, road oil and tar, tree sap, bird droppings, chemicals from industrial chimneys, etc., can damage your vehicle’s finish if they remain on painted surfaces. Wash the vehicle as soon as possible. If necessary, use non-abrasive cleaners that are marked safe for painted surfaces to remove foreign matter.

Exterior painted surfaces are subject to aging, weather and chemical fallout that can take their toll over a period of years. You can help to keep the paint finish looking new by keeping your vehicle garaged or covered whenever possible.

## Cleaning Windshield and Wiper Blades

If the windshield is not clear after using the windshield washer, or if the wiper blade chatters when running, wax, sap or other material may be on the blade or windshield.

Clean the outside of the windshield with a full-strength glass cleaning liquid. The windshield is clean if beads do not form when you rinse it with water.

Grime from the windshield will stick to the wiper blades and affect their performance. Clean the blade by wiping vigorously with a cloth soaked in full-strength windshield washer solvent. Then rinse the blade with water.

Check the wiper blades and clean them as necessary; replace blades that look worn.



DEP DEALER E-PROCESS

## Cleaning Aluminum or Chrome-Plated Wheels

Your vehicle may be equipped with either aluminum or chrome-plated wheels.

Keep your wheels clean using a soft clean cloth with mild soap and water. Rinse with clean water. After rinsing thoroughly, dry with a soft clean towel. A wax may then be applied.

The surface of these wheels is similar to the painted surface of your vehicle. Do not use strong soaps, chemicals, abrasive polishes, abrasive cleaners, cleaners with acid, or abrasive cleaning brushes on them because you could damage the surface. Do not use chrome polish on aluminum wheels.

Use chrome polish only on chrome-plated wheels, but avoid any painted surface of the wheel, and buff off immediately after application.

Do not take your vehicle through an automatic car wash that has silicone carbide tire cleaning brushes. These brushes can also damage the surface of these wheels.

## Cleaning Tires

To clean your tires, use a stiff brush with tire cleaner.

***Notice:*** **Using petroleum-based tire dressing products on your vehicle may damage the paint finish and/or tires. When applying a tire dressing, always wipe off any overspray from all painted surfaces on your vehicle.**

## Sheet Metal Damage

If your vehicle is damaged and requires sheet metal repair or replacement, make sure the body repair shop applies anti-corrosion material to parts repaired or replaced to restore corrosion protection.

Original manufacturer replacement parts will provide the corrosion protection while maintaining the warranty.

## Finish Damage

Any stone chips, fractures or deep scratches in the finish should be repaired right away. Bare metal will corrode quickly and may develop into major repair expense.

Minor chips and scratches can be repaired with touch-up materials avaliable from your dealer. Larger areas of finish damage can be corrected in your dealer's body and paint shop.

DEP
DEALER E-PROCESS

## Underbody Maintenance

Chemicals used for ice and snow removal and dust control can collect on the underbody. If these are not removed, corrosion and rust can develop on the underbody parts such as fuel lines, frame, floor pan and exhaust system even though they have corrosion protection.

At least every spring, flush these materials from the underbody with plain water. Clean any areas where mud and debris can collect. Dirt packed in close areas of the frame should be loosened before being flushed. Your dealer or an underbody car washing system can do this for you.

## Chemical Paint Spotting

Some weather and atmospheric conditions can create a chemical fallout. Airborne pollutants can fall upon and attack painted surfaces on your vehicle. This damage can take two forms: blotchy, ring-shaped discolorations, and small, irregular dark spots etched into the paint surface.

Although no defect in the paint job causes this, GM will repair, at no charge to the owner, the surfaces of new vehicles damaged by this fallout condition within 12 months or 12,000 miles (20 000 km) of purchase, whichever occurs first.

## Vehicle Care/Appearance Materials

See your GM dealer for more information on purchasing the following products.

**Vehicle Care/Appearance Materials**

| Description | Usage |
|---|---|
| Polishing Cloth Wax-Treated | Interior and exterior polishing cloth. |
| Tar and Road Oil Remover | Removes tar, road oil and asphalt. |
| Chrome Cleaner and Polish | Use on chrome or stainless steel. |
| White Sidewall Tire Cleaner | Removes soil and black marks from whitewalls. |
| Vinyl Cleaner | Cleans vinyl tops, upholstery and convertible tops. |
| Glass Cleaner | Removes dirt, grime, smoke and fingerprints. |
| Chrome and Wire Wheel Cleaner | Removes dirt and grime from chrome wheels and wire wheel covers. |
| Finish Enhancer | Removes dust, fingerprints, and surface contaminants. Spray on wipe off. |



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**Vehicle Care/Appearance Materials (cont'd)**

| Description | Usage |
|---|---|
| Swirl Remover Polish | Removes swirl marks, fine scratches and other light surface contamination. |
| Cleaner Wax | Removes light scratches and protects finish. |
| Foaming Tire Shine Low Gloss | Cleans, shines and protects in one easy step, no wiping necessary. |
| Wash Wax Concentrate | Medium foaming shampoo. Cleans and lightly waxes. Biodegradable and phosphate free. |
| Spot Lifter | Quickly and easily removes spots and stains from carpets, vinyl and cloth upholstery. |
| Odor Eliminator | Odorless spray odor eliminator used on fabrics, vinyl, leather and carpet. |
| See your General Motors parts department for these products. See *Part D: Recommended Fluids and Lubricants on page 6-25*. | |

# Vehicle Identification

## Vehicle Identification Number (VIN)




This is the legal identifier for your vehicle. It appears on a plate in the front corner of the instrument panel, on the driver's side. You can see it if you look through the windshield from outside your vehicle. The VIN also appears on the Vehicle Certification and Service Parts labels and the certificates of title and registration.

DEP DEALER E-PROCESS

### Engine Identification

The 8th character in your VIN is the engine code. This code will help you identify your engine, specifications and replacement parts.

## Service Parts Identification Label

You will find this label on your spare tire cover. It is very helpful if you ever need to order parts. On this label, you will find the following:

- VIN
- Model designation
- Paint information
- Production options and special equipment

Be sure that this label is not removed from the vehicle.

# Electrical System

## Add-On Electrical Equipment

***Notice:*** **Don't add anything electrical to your vehicle unless you check with your dealer first. Some electrical equipment can damage your vehicle and the damage wouldn't be covered by your warranty. Some add-on electrical equipment can keep other components from working as they should.**

Your vehicle has an air bag system. Before attempting to add anything electrical to your vehicle, see *Servicing Your Air Bag-Equipped Vehicle on page 1-56*.

## Headlamp Wiring

The headlamp wiring is protected by fuses. Should your headlamps fail to function, have your headlamp system checked right away.



DEP DEALER E-PROCESS

## Windshield Wiper Fuses

The windshield wiper motor is protected by a circuit breaker and a fuse. If the motor overheats due to heavy snow or ice, the wiper will stop until the motor cools. If the overload is caused by some electrical problem, have it fixed.

## Power Windows and Other Power Options

Circuit breakers in the fuse panel protect the power windows and other power accessories. When the current load is too heavy, the circuit breaker opens and closes, protecting the circuit until the problem is fixed.

## Fuses and Circuit Breakers

The wiring circuits in your vehicle are protected from short circuits by a combination of fuses, circuit breakers and fusible thermal links. This greatly reduces the chance of damage caused by electrical problems.

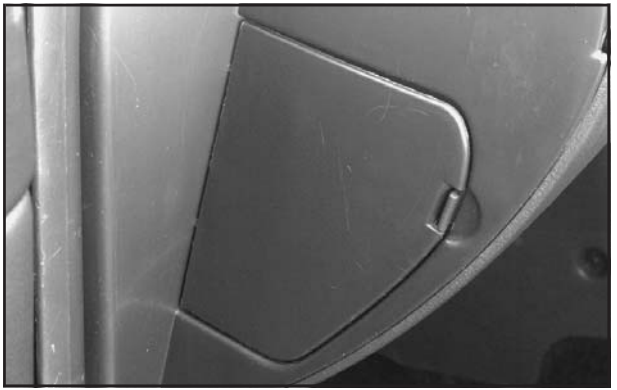
Look at the silver-colored band inside the fuse. If the band is broken or melted, replace the fuse. Be sure you replace a bad fuse with a new one of the identical size and rating.

If you ever have a problem on the road and do not have a spare fuse, you can “borrow” one that has the same amperage. Just pick some feature of your vehicle that you can get along without — like the radio or cigarette lighter — and use its fuse if it is the correct amperage. Replace it as soon as you can.

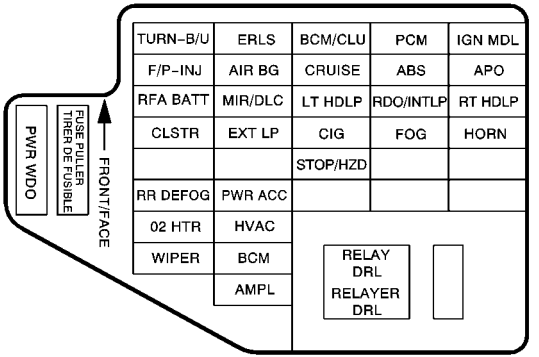
There are two fuse blocks in your vehicle: the instrument panel fuse block and the engine compartment fuse block.

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DEALER E-PROCESS

## Instrument Panel Fuse Block



The instrument panel fuse block is located on the driver's side of the instrument panel. To open, push the tab on the access door to the left and pull the door forward. Make sure to insert the tabs when replacing the cover.




| Fuses | Usage |
|---|---|
| TURN-B/U | Turn Signals, Back-Up Lamps |
| ERLS | Engine Relays |
| BCM/CLU | Body Control Module, Instrument Panel Cluster |
| PCM | Powertrain Control Module |
| IGN MDL | Ignition Module |
| F/P-INJ | Fuel Pump, Fuel Injectors |
| AIR BG | Air Bag |
| CRUISE | Cruise Control Module/Switch |
| ABS | Anti-Lock Brake (Ignition) |
| APO | Accessory Power Outlet |



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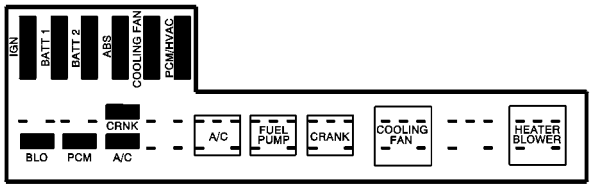
| Fuses | Usage |
|---|---|
| RFA BATT | Remote Keyless Entry System |
| MIR/DLC | Power Mirror/Diagnostic Link Connector |
| LT HDLP | Left Headlamp |
| RDO/INTLP | Radio, Interior Lamps, OnStar® |
| RT HDLP | Right Headlamps |
| CLSTR | Instrument Panel Cluster |
| EXT LP | Exterior Lamps |
| CIG | Cigarette Lighter |
| FOG | Fog Lamps |
| HORN | Horn |
| Blank | Not Used |
| Blank | Not Used |
| STOP/HZD | Stop Lamps, Hazard Lamps |
| Blank | Not Used |

| Fuses | Usage |
|---|---|
| Blank | Not Used |
| RR DEFOG | Rear Window Defogger |
| PWR ACC | Power Door Locks |
| Blank | Not Used |
| Blank | Not Used |
| Blank | Not Used |
| O2 HTR | Oxygen Sensor Heater |
| HVAC | Climate Control System |
| WIPER | Windshield Wiper |
| BCM | Body Control Module |
| AMPL | Audio Amplifier |
| PWR WDO | Power Windows, Sunroof |
| RELAY DRL | Daytime Running Lamps (Relay) |
| Blank | Not Used |

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## Engine Compartment Fuse Block

The engine compartment fuse block is located on the driver's side of the vehicle. Lift off the cover to check the fuses. See *Engine Compartment Overview on page 5-12* for more information on location.




| Fuses | Usage |
|---|---|
| IGN | Ignition Switch Circuits |
| BATT 1 | Exterior Lamps, Power Outlet, Horn, Audio Amplifier |
| BATT 2 | Rear Defogger, Starter, Power Locks, Stoplamp |
| ABS | Anti-Lock Brake System |
| COOLING FAN | Engine Cooling Fan |
| PCM/HVAC | Powertrain Control Module, Heater and A/C Blower |
| CRNK | Starter |
| BLO | Heater and A/C Blower |
| PCM | Powertrain Control Module |
| A/C | A/C Compressor |
| A/C | A/C Compressor |
| FUEL PUMP | Fuel Pump |
| CRNK | Starter |
| COOLING/FAN | Engine Cooling Fan |
| HEATER BLOWER | Heater and A/C Blower |



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# Capacities and Specifications

The following approximate capacities are given in English and metric conversions. Please refer to *Part D: Recommended Fluids and Lubricants on page 6-25* for more information.

| Application | Capacities | |
|---|---|---|
| | English | Metric |
| Air Conditioning Refrigerant R134a | 1.5 lbs | 0.68 kg |
| Cooling System | 8.6 quarts | 8.2 L |
| Engine Oil with Filter | 5.0 quarts | 4.8 L |
| Fuel Tank | 14.1 gallons | 53.4 L |
| Transaxle, Automatic | | |
| Complete Overhaul | 9.5 quarts | 9.0 L |
| Transaxle, Manual | | |
| Complete Drain and Refill | 1.8 quarts | 1.7 L |
| Wheel Nut Torque | 100 lb-ft | 140 N•m |
| All capacities are approximate. When adding, be sure to fill to the appropriate level, as recommended in this manual. | | |

## Engine Specifications

| Engine | VIN Code | Transaxle | Spark Plug Gap |
|---|---|---|---|
| 2.2L L4 (L61) | F | Automatic and Manual | 0.042 inch (1.06 mm) |

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# Normal Maintenance Replacement Parts

Replacement parts identified below by name, part number, or specification can be obtained from your dealer.

| Part | GM Part Number | ACDelco® Part Number |
|---|---|---|
| Engine Air Cleaner/Filter | 25098845 | A1172C |
| Engine Oil Filter | 24460713 | PF2244G |
| Spark Plugs | 25337472 | 41–981 |
| Windshield Wiper Blade (Shepherd's Hook Type) | | |
| Driver's Side<br>22 inches (56 cm) | 22155307 | — |
| Passenger's Side<br>17 inches (43 cm) | 12362505 | — |



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# Section 6 Maintenance Schedule


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# Maintenance Schedule

## Introduction

**Important: Keep engine oil at the proper level and change as recommended.**

*Have you purchased the GM Protection Plan? The Plan supplements your new vehicle warranties. See your Warranty and Owner Assistance booklet or your dealer for details.*

## Maintenance Requirements

Maintenance intervals, checks, inspections and recommended fluids and lubricants as prescribed in this manual are necessary to keep your vehicle in good working condition. Any damage caused by failure to follow scheduled maintenance may not be covered by warranty.

## Your Vehicle and the Environment

Proper vehicle maintenance not only helps to keep your vehicle in good working condition, but also helps the environment. Improper vehicle maintenance can even affect the quality of the air we breathe. Improper fluid levels or the wrong tire inflation can increase the level of emissions from your vehicle. To help protect our environment, and to keep your vehicle in good condition, be sure to maintain your vehicle properly.



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## How This Section is Organized

This maintenance schedule is divided into five parts:

**“Part A: Scheduled Maintenance Services”** explains what to have done and how often. Some of these services can be complex, so unless you are technically qualified and have the necessary equipment, you should let your GM dealer’s service department do these jobs.

Your GM dealer has GM-trained and supported service people that will perform the work using genuine GM parts.

**⚠ CAUTION:**

**Performing maintenance work on a vehicle can be dangerous. In trying to do some jobs, you can be seriously injured. Do your own maintenance work only if you have the required know-how and the proper tools and equipment for the job. If you have any doubt, have a qualified technician do the work.**

If you want to get the service information, see *Service Publications Ordering Information on page 7-11*.

**“Part B: Owner Checks and Services”** tells you what should be checked and when. It also explains what you can easily do to help keep your vehicle in good condition.

**“Part C: Periodic Maintenance Inspections”** explains important inspections that your dealer’s service department can perform for you.

**“Part D: Recommended Fluids and Lubricants”** lists some recommended products necessary to help keep your vehicle properly maintained. These products, or their equivalents, should be used whether you do the work yourself or have it done.

**“Part E: Maintenance Record”** is a place for you to record and keep track of the maintenance performed on your vehicle. Keep your maintenance receipts. They may be needed to qualify your vehicle for warranty repairs.

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## Part A: Scheduled Maintenance Services

In this part are scheduled maintenance services which are to be performed at the mileage intervals specified.

## Using Your Maintenance Schedule

We at General Motors want to keep your vehicle in good working condition. But we do not know exactly how you will drive it. You may drive short distances only a few times a week. Or you may drive long distances all the time in very hot, dusty weather. You may use your vehicle in making deliveries. Or you may drive it to work, to do errands or in many other ways.

Because of the different ways people use their vehicles, maintenance needs may vary. You may need more frequent checks and replacements. So please read the following and note how you drive. If you have questions on how to keep your vehicle in good condition, see your dealer.

This part tells you the maintenance services you should have done and when to schedule them.

When you go to your dealer for your service needs, you will know that GM-trained and supported service people will perform the work using genuine GM parts.

The proper fluids and lubricants to use are listed in Part D. Make sure whoever services your vehicle uses these. All parts should be replaced and all necessary repairs done before you or anyone else drives the vehicle.

These schedules are for vehicles that:

- carry passengers and cargo within recommended limits. You will find these on the tire and loading information label. See *Loading Your Vehicle on page 4-31*.
- are driven on reasonable road surfaces within legal driving limits.
- use the recommended fuel. See *Gasoline Octane on page 5-4*.



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## Selecting the Right Schedule

First you will need to decide which of the two schedules is right for your vehicle. Here is how to decide which schedule to follow:

## Short Trip/City Definition

Follow the Short Trip/City Scheduled Maintenance if any one of these conditions is true for your vehicle:

- Most trips are less than 5 miles (8 km). This is particularly important when outside temperatures are below freezing.
- Most trips include extensive idling, such as frequent driving in stop-and-go traffic.
- You frequently tow a trailer or use a carrier on top of your vehicle. With some models, you should never tow a trailer. See *Towing a Trailer (Automatic Transaxle) on page 4-37* or *Towing a Trailer (Manual Transaxle) on page 4-43*.
- If the vehicle is used for delivery service, police, taxi or other commercial application.

*One of the reasons you should follow this schedule if you operate your vehicle under any of these conditions is that these conditions cause engine oil to break down sooner.*

## Short Trip/City Intervals

**Every 3,000 Miles (5 000 km):** Engine Oil and Filter Change (or 3 months, whichever occurs first).

**Every 6,000 Miles (10 000 km):** Chassis Lubrication (or 6 months, whichever occurs first). Tire Rotation.

**Every 15,000 Miles (25 000 km):** Engine Air Cleaner Filter Inspection.

**Every 30,000 Miles (50 000 km):** Engine Air Cleaner Filter Replacement.

**Every 50,000 Miles (83 000 km):** Automatic Transaxle Service (severe conditions only).

**Every 100,000 Miles (166 000 km):** Spark Plug Wire Inspection. Spark Plug Replacement.

**Every 150 000 Miles (240 000 km):** Cooling System Service (or every 60 months, whichever occurs first). Engine Accessory Drive Belt Inspection.

*These intervals only summarize maintenance services. Be sure to follow the complete scheduled maintenance on the following pages.*

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## Long Trip/Highway Definition

Follow this scheduled maintenance *only* if none of the conditions from the Short Trip/City Scheduled Maintenance are true. Do not use this schedule if the vehicle is used for trailer towing, driven in a dusty area or used off paved roads. Use the Short Trip/City schedule for these conditions.

*Driving a vehicle with a fully warmed engine under highway conditions will cause engine oil to break down slower.*

## Long Trip/Highway Intervals

**Every 7,500 Miles (12 500 km):** Engine Oil and Filter Change (or every 12 months, whichever occurs first). Chassis Lubrication (or 12 months, whichever occurs first). Tire Rotation.

**Every 15,000 Miles (25 000 km):** Engine Air Cleaner Filter Inspection.

**Every 30,000 Miles (50 000 km):** Engine Air Cleaner Filter Replacement.

**Every 50,000 Miles (83 000 km):** Automatic Transaxle Service (severe conditions only).

**Every 100,000 Miles (166 000 km):** Spark Plug Wire Inspection. Spark Plug Replacement.

**Every 150,000 Miles (240 000 km):** Cooling System Service (or every 60 months, whichever occurs first). Engine Accessory Drive Belt Inspection.

*These intervals only summarize maintenance services. Be sure to follow the complete scheduled maintenance on the following pages.*

## Short Trip/City Scheduled Maintenance

The services shown in this schedule up to 100,000 miles (166 000 km) should be repeated after 100,000 miles (166 000 km) at the same intervals for the life of this vehicle. The services shown at 150,000 miles (240 000 km) should be repeated at the same interval after 150,000 miles (240 000 km) for the life of this vehicle.

See *Part B: Owner Checks and Services on page 6-18* and *Part C: Periodic Maintenance Inspections on page 6-23*.



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## Footnotes

† *The U.S. Environmental Protection Agency or the California Air Resources Board has determined that the failure to perform this maintenance item will not nullify the emission warranty or limit recall liability prior to the completion of the vehicle's useful life. We, however, urge that all recommended maintenance services be performed at the indicated intervals and the maintenance be recorded.*

*# Lubricate the suspension, steering linkage and the transaxle shift linkage.*

*+ A good time to check your brakes is during tire rotation. See Brake System Inspection on page 6-24*.

*++ If you drive in a highly corrosive environment, your brake calipers may require additional inspection and service, at every other tire rotation. See Caliper/Knuckle Maintenance Inspection on page 6-24*.

## 3,000 Miles (5 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*

## 6,000 Miles (10 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 6 months, whichever occurs first). *(See footnote #.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.)*

## 9,000 Miles (15 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*

## 12,000 Miles (20 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 6 months, whichever occurs first). *(See footnote #.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.) (Also see footnote ++.)*

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## 15,000 Miles (25 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ❑ Inspect engine air cleaner filter. If necessary, replace the filter. If vehicle is driven in dusty/dirty conditions, inspect filter at every engine oil change. See *Engine Air Cleaner/Filter on page 5-17* for more information. *An Emission Control Service. (See footnote †.)*

## 18,000 Miles (30 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 6 months, whichever occurs first). *(See footnote #.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.)*

## 21,000 Miles (35 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*

## 24,000 Miles (40 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 6 months, whichever occurs first). *(See footnote #.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.) (Also see footnote ++.)*

## 27,000 Miles (45 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*

## 30,000 Miles (50 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 6 months, whichever occurs first). *(See footnote #.)*
- ❑ Replace engine air cleaner filter. See *Engine Air Cleaner/Filter on page 5-17* for more information. *An Emission Control Service.*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.)*



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## 33,000 Miles (55 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*

## 36,000 Miles (60 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 6 months, whichever occurs first). *(See footnote #.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.) (Also see footnote ++.)*

## 39,000 Miles (65 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*

## 42,000 Miles (70 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 6 months, whichever occurs first). (See footnote #.)
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.)*

## 45,000 Miles (75 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ❑ Inspect engine air cleaner filter. If necessary, replace the filter. If vehicle is driven in dusty/dirty conditions, inspect filter at every engine oil change. See *Engine Air Cleaner/Filter on page 5-17* for more information. *An Emission Control Service. (See footnote †.)*

## 48,000 Miles (80 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 6 months, whichever occurs first). (See footnote #.)
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.) (Also see footnote ++.)*

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## 50,000 Miles (83 000 km)

- ❑ Change automatic transaxle fluid and filter if the vehicle is mainly driven under one or more of these conditions:
  - − In heavy city traffic where the outside temperature regularly reaches 90°F (32°C) or higher.
  - − In hilly or mountainous terrain.
  - − When doing frequent trailer towing.
  - − Uses such as found in taxi, police or delivery service.

*If you do not use your vehicle under any of these conditions, the fluid and filter do not require changing.*

Manual transaxle fluid does not require change.

## 51,000 Miles (85 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*

## 54,000 Miles (90 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 6 months, whichever occurs first). *(See footnote #.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.)*

## 57,000 Miles (95 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*

## 60,000 Miles (100 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 6 months, whichever occurs first). *(See footnote #.)*
- ❑ Replace engine air cleaner filter. See *Engine Air Cleaner/Filter on page 5-17* for more information. *An Emission Control Service.*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.) (Also see footnote ++.)*

## 63,000 Miles (105 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*

## 66,000 Miles (110 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 6 months, whichever occurs first). *(See footnote #.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.)*



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## 69,000 Miles (115 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*

## 72,000 Miles (120 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 6 months, whichever occurs first). *(See footnote #.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.) (Also see footnote ++.)*

## 75,000 Miles (125 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ❑ Inspect engine air cleaner filter. If necessary, replace the filter. If vehicle is driven in dusty/dirty conditions, inspect filter at every engine oil change. See *Engine Air Cleaner/Filter on page 5-17* for more information. *An Emission Control Service. (See footnote †.)*

## 78,000 Miles (130 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 6 months, whichever occurs first). *(See footnote #.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.)*

## 81,000 Miles (135 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*

## 84,000 Miles (140 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 6 months, whichever occurs first). *(See footnote #.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.) (Also see footnote ++)*

## 87,000 Miles (145 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*

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## 90,000 Miles (150 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 6 months, whichever occurs first). *(See footnote #.)*
- ❑ Replace engine air cleaner filter. See *Engine Air Cleaner/Filter on page 5-17* for more information. *An Emission Control Service.*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.)*

## 93,000 Miles (155 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*

## 96,000 Miles (160 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 6 months, whichever occurs first). *(See footnote #.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.) (Also see footnote ++.)*

## 99,000 Miles (165 000 km)

- ❑ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*

## 100,000 Miles (166 000 km)

- ❑ Replace spark plugs. *An Emission Control Service.*
- ❑ Change automatic transaxle fluid and filter if the vehicle is mainly driven under one or more of these conditions:
  - − In heavy city traffic where the outside temperature regularly reaches 90°F (32°C) or higher.
  - − In hilly or mountainous terrain.
  - − When doing frequent trailer towing.
  - − Uses such as found in taxi, police or delivery service.

*If you do not use your vehicle under any of these conditions, the fluid and filter do not require changing.*

Manual transaxle fluid does not require changing.

## 150,000 Miles (240 000 km)

- ❑ Drain, flush and refill cooling system (or every 60 months since last service, whichever occurs first). See *Engine Coolant on page 5-20* for what to use. Inspect hoses. Clean radiator, condenser, pressure cap and neck. Pressure test the cooling system and pressure cap. *An Emission Control Service.*
- ❑ Inspect engine accessory drive belt. *An Emission Control Service.*



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## Long Trip/Highway Scheduled Maintenance

The services shown in this schedule up to 100,000 miles (166 000 km) should be repeated after 100,000 miles (166 000 km) at the same intervals for the life of this vehicle. The services shown at 150,000 miles (240 000 km) should be repeated at the same interval after 150,000 miles (240 000 km) for the life of this vehicle.

See *Part B: Owner Checks and Services on page 6-18* and *Part C: Periodic Maintenance Inspections on page 6-23*.

## Footnotes

*† The U.S. Environmental Protection Agency or the California Air Resources Board has determined that the failure to perform this maintenance item will not nullify the emission warranty or limit recall liability prior to the completion of the vehicle's useful life. We, however, urge that all recommended maintenance services be performed at the indicated intervals and the maintenance be recorded.*

*# Lubricate the suspension, steering linkage and the transaxle shift linkage.*

*+ A good time to check your brakes is during tire rotation. See Brake System Inspection on page 6-24.*

*++ If you drive in a highly corrosive environment, your brake calipers may require additional inspection and service at every other tire rotation. See Caliper/Knuckle Maintenance Inspection on page 6-24.*

### 7,500 Miles (12 500 km)

- ❑ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.)*

### 15,000 Miles (25 000 km)

- ❑ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ❑ Inspect engine air cleaner filter. See *Engine Air Cleaner/Filter on page 5-17* for more information. *An Emission Control Service. (See footnote †.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.) (Also see footnote ++.)*

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## 22,500 Miles (37 500 km)

- ❑ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.)*

## 30,000 Miles (50 000 km)

- ❑ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.) (Also see footnote ++.)*
- ❑ Replace engine air cleaner filter. See *Engine Air Cleaner/Filter on page 5-17* for more information. *An Emission Control Service.*

## 37,500 Miles (62 500 km)

- ❑ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.)*

## 45,000 Miles (75 000 km)

- ❑ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ❑ Inspect engine air cleaner filter. See *Engine Air Cleaner/Filter on page 5-17* for more information. *An Emission Control Service. (See footnote †.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.) (Also see footnote ++.)*



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## 50,000 Miles (83 000 km)

- ❑ Change automatic transaxle fluid and filter if the vehicle is mainly driven under one or more of these conditions:
  - − In heavy city traffic where the outside temperature regularly reaches 90°F (32°C) or higher.
  - − In hilly or mountainous terrain.
  - − When doing frequent trailer towing.
  - − Uses such as found in taxi, police or delivery service.

*If you do not use your vehicle under any of these conditions, the fluid and filter do not require changing.*

Manual transaxle fluid does not require change.

## 52,500 Miles (87 500 km)

- ❑ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.)*

## 60,000 Miles (100 000 km)

- ❑ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.) (Also see footnote ++.)*
- ❑ Replace engine air cleaner filter. See *Engine Air Cleaner/Filter on page 5-17* for more information. *An Emission Control Service.*

## 67,500 Miles (112 500 km)

- ❑ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.)*

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## 75,000 Miles (125 000 km)

- ❑ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ❑ Inspect engine air cleaner filter. See *Engine Air Cleaner/Filter on page 5-17* for more information. *An Emission Control Service. (See footnote †.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.) (Also see footnote ++.)*

## 82,500 Miles (137 500 km)

- ❑ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.)*

## 90,000 Miles (150 000 km)

- ❑ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ❑ Replace engine air cleaner filter. See *Engine Air Cleaner/Filter on page 5-17* for more information. *An Emission Control Service.*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.) (Also see footnote ++.)*

## 97,500 Miles (162 500 km)

- ❑ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ❑ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ❑ Rotate tires. See *Tire Inspection and Rotation on page 5-54* for proper rotation pattern and additional information. *(See footnote +.)*



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## 100,000 Miles (166 000 km)

- ❑ Replace spark plugs. *An Emission Control Service.*
- ❑ Change automatic transaxle fluid and filter if the vehicle is mainly driven under one or more of these conditions:
  - − In heavy city traffic where the outside temperature regularly reaches 90°F (32°C) or higher.
  - − In hilly or mountainous terrain.
  - − When doing frequent trailer towing.
  - − Uses such as found in taxi, police or delivery service.

If you do not use your vehicle under any of these conditions, the fluid and filter do not require changing.

Manual transaxle fluid does not require change.

## 150,000 Miles (240 000 km)

- ❑ Drain, flush and refill cooling system (or every 60 months since last service, whichever occurs first). See *Engine Coolant on page 5-20* for what to use. Inspect hoses. Clean radiator, condenser, pressure cap and neck. Pressure test the cooling system and pressure cap. *An Emission Control Service.*
- ❑ Inspect engine accessory drive belt. *An Emission Control Service.*

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## Part B: Owner Checks and Services

Listed in this part are owner checks and services which should be performed at the intervals specified to help ensure the safety, dependability and emission control performance of your vehicle.

Be sure any necessary repairs are completed at once. Whenever any fluids or lubricants are added to your vehicle, make sure they are the proper ones, as shown in Part D.

## At Each Fuel Fill

*It is important for you or a service station attendant to perform these underhood checks at each fuel fill.*

### Engine Oil Level Check

Check the engine oil level and add the proper oil if necessary. See *Engine Oil on page 5-13* for further details.

### Engine Coolant Level Check

Check the engine coolant level and add DEX-COOL® coolant mixture if necessary. See *Engine Coolant on page 5-20* for further details.

### Windshield Washer Fluid Level Check

Check the windshield washer fluid level in the windshield washer tank and add the proper fluid if necessary. See *Windshield Washer Fluid on page 5-31* for further details.

## At Least Once a Month

### Tire Inflation Check

Visually inspect your tires and make sure tires are inflated to the correct pressures. Do not forget to check your spare tire. See *Tires on page 5-46* for further details.

### Cassette Tape Player Service

Clean cassette tape player. Cleaning should be done every 50 hours of tape play. See *Audio System(s) on page 3-35* for further details.

## At Least Twice a Year

### Restraint System Check

Make sure the safety belt reminder light and all your belts, buckles, latch plates, retractors and anchorages are working properly. Look for any other loose or damaged safety belt system parts. If you see anything that might keep a safety belt system from doing its job, have it repaired. Have any torn or frayed safety belts replaced.



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Also look for any opened or broken air bag coverings, and have them repaired or replaced. (The air bag system does not need regular maintenance.)

## Wiper Blade Check

Inspect wiper blades for wear or cracking. Replace blade inserts that appear worn or damaged or that streak or miss areas of the windshield. Also see *Cleaning the Outside of Your Vehicle on page 5-75*.

## Weatherstrip Lubrication

Silicone grease on weatherstrips will make them last longer, seal better, and not stick or squeak. Apply silicone grease with a clean cloth. During very cold, damp weather more frequent application may be required. See *Part D: Recommended Fluids and Lubricants on page 6-25*.

## Manual Transaxle Check

It is not necessary to check the transaxle fluid level. Check for leaks. A fluid leak is the only reason for fluid loss. Have the system inspected and repaired if needed.

## Automatic Transaxle Inspection

It is not necessary to check the transaxle fluid level. A transaxle fluid leak is the only reason for fluid loss. Check for leaks. If a leak occurs, take the vehicle to your dealer and have it repaired as soon as possible.

## Hydraulic Clutch System Check

Check the fluid level in the clutch reservoir. See *Hydraulic Clutch on page 5-19*. A fluid loss in this system could indicate a problem. Have the system inspected and repaired at once.

# At Least Once a Year

## Key Lock Cylinders Service

Lubricate the key lock cylinders with the lubricant specified in Part D.

## Body Lubrication Service

Lubricate all hood latch assemblies, secondary latch, pivots, spring anchor, release pawl, hood and body door hinges, rear compartment and any folding seat hardware. Part D tells you what to use. More frequent lubrication may be required when exposed to a corrosive environment.

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## Starter Switch Check

**⚠ CAUTION:**

**When you are doing this inspection, the vehicle could move suddenly. If the vehicle moves, you or others could be injured.**

1. Before you start, be sure you have enough room around the vehicle.
2. Firmly apply both the parking brake and the regular brake. See *Parking Brake on page 2-25* if necessary.

   Do not use the accelerator pedal, and be ready to turn off the engine immediately if it starts.
3. On automatic transaxle vehicles, try to start the engine in each gear. The starter should work only in PARK (P) or NEUTRAL (N). If the starter works in any other position, your vehicle needs service.

   On manual transaxle vehicles, put the shift lever in NEUTRAL (N), push the clutch down halfway and try to start the engine. The starter should work only when the clutch is pushed down all the way to the floor. If the starter works when the clutch is not pushed all the way down, your vehicle needs service.



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## Automatic Transaxle Shift Lock Control System Check

**⚠ CAUTION:**

**When you are doing this inspection, the vehicle could move suddenly. If the vehicle moves, you or others could be injured.**

1. Before you start, be sure you have enough room around the vehicle. It should be parked on a level surface.
2. Firmly apply the parking brake. See *Parking Brake on page 2-25* if necessary.

   Be ready to apply the regular brake immediately if the vehicle begins to move.
3. With the engine off, turn the key to the RUN position, but do not start the engine. Without applying the regular brake, try to move the shift lever out of PARK (P) with normal effort. If the shift lever moves out of PARK (P), your vehicle needs service.

## Ignition Transaxle Lock Check

While parked, and with the parking brake set, try to turn the ignition key to LOCK in each shift lever position.

- With an automatic transaxle, the key should turn to LOCK only when the shift lever is in PARK (P).
- With a manual transaxle, the key should turn to LOCK only when you press the key release button.

On all vehicles, the key should come out only in LOCK.

Turn the steering wheel to the left and to the right. It should only lock when turned to the right.

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## Parking Brake and Automatic Transaxle Park (P) Mechanism Check

**⚠ CAUTION:**

**When you are doing this check, your vehicle could begin to move. You or others could be injured and property could be damaged. Make sure there is room in front of your vehicle in case it begins to roll. Be ready to apply the regular brake at once should the vehicle begin to move.**

Park on a fairly steep hill, with the vehicle facing downhill. Keeping your foot on the regular brake, set the parking brake.

- To check the parking brake's holding ability: With the engine running and transaxle in NEUTRAL (N), slowly remove foot pressure from the regular brake pedal. Do this until the vehicle is held by the parking brake only.
- To check the PARK (P) mechanism's holding ability: With the engine running, shift to PARK (P). Then release the parking brake followed by the regular brake.

## Underbody Flushing Service

At least every spring, use plain water to flush any corrosive materials from the underbody. Take care to clean thoroughly any areas where mud and other debris can collect.



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## Part C: Periodic Maintenance Inspections

Listed in this part are inspections and services which should be performed at least twice a year (for instance, each spring and fall). *You should let your dealer's service department do these jobs. Make sure any necessary repairs are completed at once.*

Proper procedures to perform these services may be found in a service manual. See *Service Publications Ordering Information on page 7-11*.

## Steering, Suspension and Front Drive Axle Boot and Seal Inspection

Inspect the front and rear suspension and steering system for damaged, loose or missing parts, signs of wear or lack of lubrication. Inspect the power steering lines and hoses for proper hook-up, binding, leaks, cracks, chafing, etc. Clean and then inspect the drive axle boot seals for damage, tears or leakage. Replace seals if necessary.

## Exhaust System Inspection

Inspect the complete exhaust system. Inspect the body near the exhaust system. Look for broken, damaged, missing or out-of-position parts as well as open seams, holes, loose connections or other conditions which could cause a heat build-up in the floor pan or could let exhaust fumes into the vehicle. See *Engine Exhaust on page 2-28*.

## Fuel System Inspection

Inspect the complete fuel system for damage or leaks.

## Engine Cooling System Inspection

Inspect the hoses and have them replaced if they are cracked, swollen or deteriorated. Inspect all pipes, fittings and clamps; replace as needed. Clean the outside of the radiator and air conditioning condenser. To help ensure proper operation, a pressure test of the cooling system and pressure cap is recommended at least once a year.

## Throttle System Inspection

Inspect the throttle system for interference or binding, and for damaged or missing parts. Replace parts as needed. Replace any components that have high effort or excessive wear. Do not lubricate accelerator and cruise control cables.

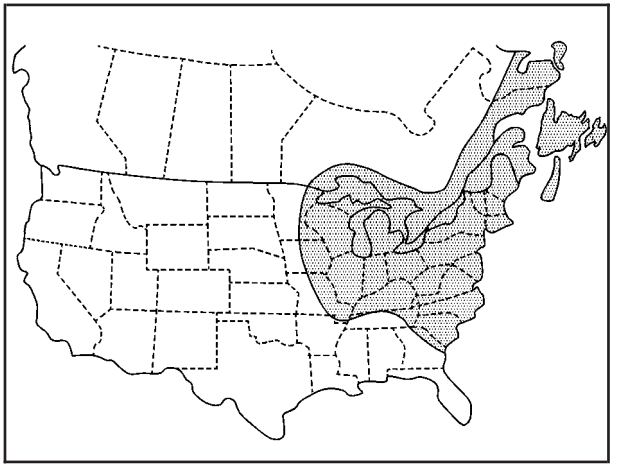
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## Brake System Inspection

Inspect the complete system. Inspect brake lines and hoses for proper hook-up, binding, leaks, cracks, chafing, etc. Inspect disc brake pads for wear and rotors for surface condition. Also inspect drum brake linings for wear and cracks. Inspect other brake parts, including drums, wheel cylinders, calipers, parking brake, etc. Check parking brake adjustment. You may need to have your brakes inspected more often if your driving habits or conditions result in frequent braking.

## Caliper/Knuckle Maintenance Inspection

If you operate your vehicle in a highly corrosive environment, as indicated by the shaded areas on the map following this text, your vehicle may require additional brake service. Refer to the appropriate GM service bulletin for the proper caliper inspection procedure. As necessary, caliper pins and knuckle brake pad abutments should be lubricated at every other tire rotation. Also, see your GM dealer's service department or qualified service center for additional information.





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## Part D: Recommended Fluids and Lubricants

Fluids and lubricants identified below by name, part number or specification may be obtained from your dealer.

| Usage | Fluid/Lubricant |
|---|---|
| Engine Oil | Engine oil which meets GM Standard GM6094M and displays the American Petroleum Institute Certified for Gasoline Engines starburst symbol. To determine the proper viscosity for your vehicle's engine, see *Engine Oil on page 5-13*. |
| Engine Coolant | 50/50 mixture of clean, drinkable water and use only DEX-COOL® Coolant. See *Engine Coolant on page 5-20*. |
| Hydraulic Brake System | Delco Supreme 11 Brake Fluid or equivalent DOT-3 brake fluid. |
| Windshield Washer Solvent | GM Optikleen® Washer Solvent. |
| Hydraulic Clutch System | Hydraulic Clutch Fluid (GM Part No. U.S. 12345347, in Canada 10953517) or equivalent DOT-3 brake fluid. |
| Power Steering System | GM Power Steering Fluid (GM Part No. U.S. 89021184, in Canada 89021186). |
| Manual Transaxle | DEXRON®-III Automatic Transmission Fluid. |

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| Usage | Fluid/Lubricant |
|---|---|
| Automatic Transaxle | DEXRON®-III Automatic Transmission Fluid. |
| Key Lock Cylinders | Multi-Purpose Lubricant, Superlube (GM Part No. U.S. 12346241, in Canada 10953474). |
| Manual Transaxle Shift Linkage | Chassis Lubricant (GM Part No. U.S. 12377985, in Canada 88901242) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB. |
| Clutch Linkage Pivot Points | Engine oil. |
| Chassis Lubrication | Chassis Lubricant (GM Part No. U.S. 12377985, in Canada 88901242t) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB. |

| Usage | Fluid/Lubricant |
|---|---|
| Hood Latch Assembly, Secondary Latch, Pivots, Spring Anchor and Release Pawl | Lubriplate Lubricant Aerosol (GM Part No. U.S. 12346293, in Canada 992723) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB. |
| Hood and Door Hinges | Multi-Purpose Lubricant, Superlube (GM Part No. U.S. 12346241, in Canada 10953474). |
| Weatherstrip Conditioning | Dielectric Silicone Grease (GM Part No. U.S. 12345579, in Canada 992887). |



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## Part E: Maintenance Record

After the scheduled services are performed, record the date, odometer reading and who performed the service and any additional information from “Owner Checks and Services” or “Periodic Maintenance” on the following record pages. Also, you should retain all maintenance receipts.

### Maintenance Record

| Date | Odometer Reading | Serviced By | Maintenance Record |
|---|---|---|---|
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## Maintenance Record (cont'd)

| Date | Odometer Reading | Serviced By | Maintenance Record |
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# Section 7 Customer Assistance and Information


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# Customer Assistance and Information

## Customer Satisfaction Procedure

Your satisfaction and goodwill are important to your dealer and to Chevrolet. Normally, any concerns with the sales transaction or the operation of your vehicle will be resolved by your dealer's sales or service departments. Sometimes, however, despite the best intentions of all concerned, misunderstandings can occur. If your concern has not been resolved to your satisfaction, the following steps should be taken:

**STEP ONE:** Discuss your concern with a member of dealership management. Normally, concerns can be quickly resolved at that level. If the matter has already been reviewed with the sales, service or parts manager, contact the owner of the dealership or the general manager.

**STEP TWO:** If after contacting a member of dealership management, it appears your concern cannot be resolved by the dealership without further help, contact the Chevrolet Customer Assistance Center by calling 1-800-222-1020. In Canada, contact GM of Canada Customer Communication Centre in Oshawa by calling 1-800-263-3777 (English) or 1-800-263-7854 (French).

We encourage you to call the toll-free number in order to give your inquiry prompt attention. Please have the following information available to give the Customer Assistance Representative:

- Vehicle Identification Number (This is available from the vehicle registration or title, or the plate at the top left of the instrument panel and visible through the windshield.)
- Dealership name and location
- Vehicle delivery date and present mileage

When contacting Chevrolet, please remember that your concern will likely be resolved at a dealer's facility. That is why we suggest you follow Step One first if you have a concern.



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**STEP THREE:** Both General Motors and your dealer are committed to making sure you are completely satisfied with your new vehicle. However, if you continue to remain unsatisfied after following the procedure outlined in Steps One and Two, you should file with the BBB Auto Line Program to enforce any additional rights you may have. Canadian owners refer to your Warranty and Owner Assistance Information booklet for information on the Canadian Motor Vehicle Arbitration Plan (CAMVAP).

The BBB Auto Line Program is an out of court program administered by the Council of Better Business Bureaus to settle automotive disputes regarding vehicle repairs or the interpretation of the New Vehicle Limited Warranty. Although you may be required to resort to this informal dispute resolution program prior to filing a court action, use of the program is free of charge and your case will generally be heard within 40 days. If you do not agree with the decision given in your case, you may reject it and proceed with any other venue for relief available to you.

You may contact the BBB Auto Line Program using the toll-free telephone number or write them at the following address:

BBB Auto Line Program
Council of Better Business Bureaus, Inc.
4200 Wilson Boulevard
Suite 800
Arlington, VA 22203-1804
Telephone: 1-800-955-5100

This program is available in all 50 states and the District of Columbia. Eligibility is limited by vehicle age, mileage and other factors. General Motors reserves the right to change eligibility limitations and/or discontinue its participation in this program.

## Online Owner Center

The Owner Center is a resource for your GM ownership needs. You can find your specific vehicle information all in one place.

**The Owner Center allows you to:**

- Get e-mail service reminders.
- Access information about your specific vehicle, including tips and videos and an electronic version of this owner's manual. (United States only)
- Keep track of your vehicle's service history and maintenance schedule.
- Find GM dealers for service nationwide.
- Receive special promotions and privileges only available to members. (United States only)

Refer to the web for updated information.

To register your vehicle, visit www.MyGMLink.com. (United States) or My GM Canada within www.gmcanada.com (Canada).

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## Customer Assistance for Text Telephone (TTY) Users

To assist customers who are deaf, hard of hearing, or speech-impaired and who use Text Telephones (TTYs), Chevrolet has TTY equipment available at its Customer Assistance Center. Any TTY user can communicate with Chevrolet by dialing: 1-800-833-CHEV (2438). (TTY users in Canada can dial 1-800-263-3830.)

## Customer Assistance Offices

Chevrolet encourages customers to call the toll-free number for assistance. If a U.S. customer wishes to write to Chevrolet, the letter should be addressed to Chevrolet's Customer Assistance Center.

### United States – Customer Assistance

Chevrolet Motor Division
Chevrolet Customer Assistance Center
P.O. Box 33170
Detroit, MI 48232-5170

1-800-222-1020
1-800-833-2438 (For Text Telephone devices (TTYs))
Roadside Assistance: 1-800-CHEV-USA® (243-8872)
Fax Number: 313-381-0022

From Puerto Rico:
1-800-496-9992 (English)
1-800-496-9993 (Spanish)
Fax Number: 313-381-0022

From U.S. Virgin Islands:
1-800-496-9994
Fax Number: 313-381-0022

### Canada – Customer Assistance

General Motors of Canada Limited
Customer Communication Centre, 163-005
1908 Colonel Sam Drive
Oshawa, Ontario L1H 8P7

1-800-263-3777 (English)
1-800-263-7854 (French)
1-800-263-3830 (For Text Telephone devices (TTYs))
Roadside Assistance: 1-800-268-6800

### Overseas – Customer Assistance

Please contact the local General Motors Business Unit.



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## Mexico, Central America and Caribbean Islands/Countries (Except Puerto Rico and U.S. Virgin Islands) – Customer Assistance

General Motors de Mexico, S. de R.L. de C.V.
Customer Assistance Center
Paseo de la Reforma # 2740
Col. Lomas de Bezares
C.P. 11910, Mexico, D.F.
01-800-508-0000
Long Distance: 011-52-53 29 0 800

## GM Mobility Program for Persons with Disabilities



This program, available to qualified applicants, can reimburse you up to $1,000 toward eligible aftermarket driver or passenger adaptive equipment you may require for your vehicle (hand controls, wheelchair/ scooter lifts, etc.).

This program can also provide you with free resource information, such as area driver assessment centers and mobility equipment installers. The offer is available for a limited period of time from the date of vehicle purchase/lease. For more details, or to determine your vehicle's eligibility, see your GM dealer or call the GM Mobility Assistance Center at 1-800-323-9935. Text telephone (TTY) users, call 1-800-833-9935.

GM of Canada also has a Mobility Program. Call 1-800-GM-DRIVE (463-7483) for details. All TTY users call 1-800-263-3830.

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# Roadside Assistance Program

## Security While You Travel

1-800-CHEV-USA (243-8872)

As the proud owner of a new Chevrolet vehicle, you are automatically enrolled in the Chevrolet Roadside Assistance program. This value-added service is intended to provide you with peace of mind as you drive in the city or travel the open road. Chevrolet's Roadside Assistance toll-free number is staffed by courteous and capable Roadside Assistance Representatives who are available 24 hours a day, 365 days a year.

We will provide the following services during the Bumper-to-Bumper warranty period, at no expense to you:

- **Fuel Delivery:** Delivery of enough fuel ($5 maximum) for the customer to get to the nearest service station.
- **Lock-out Service (identification required):** Replacement keys or locksmith service will be covered at no charge if you are unable to gain entry into your vehicle. Delivery of the replacement key will be covered within 10 miles.
- **Emergency Tow:** Tow to the nearest dealership for warranty service or in the event of a vehicle-disabling accident. Assistance when the vehicle is mired in sand, mud or snow.
- **Flat Tire Change:** Installation of a spare tire will be covered at no charge. (The customer is responsible for the repair or replacement of the tire if not covered by a warrantable failure.)
- **Jump Start:** No-start occurrences which require a battery jump start will be covered at no charge.
- **Dealer Locator Service**

In many instances, mechanical failures are covered under Chevrolet's Bumper-to-Bumper warranty. However, when other services are utilized, our Roadside Assistance Representatives will explain any payment obligations you might incur.

For prompt and efficient assistance when calling, please provide the following to the Roadside Assistance Representative:

- Your name, home address, and home telephone number
- Telephone number of your location
- Location of the vehicle
- Model, year, color, and license plate number
- Mileage, Vehicle Identification Number and delivery date of the vehicle
- Description of the problem



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While we hope you never have the occasion to use our service, it is added security while traveling for you and your family. Remember, we are only a phone call away. Chevrolet Roadside Assistance: 1-800-CHEV-USA (1-800-234-8872), text telephone (TTY) users, call 1-888-889-2438.

Chevrolet reserves the right to limit services or reimbursement to an owner or driver when, in Chevrolet's judgement, the claims become excessive in frequency or type of occurrence.

Roadside Assistance is not part of or included in the coverage provided by the New Vehicle Limited Warranty. Buick reserves the right to make any changes or discontinue the Roadside Assistance program at any time without notification.

## Canadian Roadside Assistance

Vehicles purchased in Canada have an extensive roadside assistance program accessible from anywhere in Canada or the United States. Please refer to the Warranty and Owner Assistance Information book.

## Courtesy Transportation

Chevrolet has always exemplified quality and value in its offering of motor vehicles. To enhance your ownership experience, we and our participating dealers are proud to offer Courtesy Transportation, a customer support program for new vehicles.

The Courtesy Transportation program is offered to retail purchase/lease customers in conjunction with the Bumper-to-Bumper coverage provided by the New Vehicle Limited Warranty. Several transportation options are available when warranty repairs are required. This will reduce your inconvenience during warranty repairs.

## Plan Ahead When Possible

When your vehicle requires warranty service, you should contact your dealer and request an appointment. By scheduling a service appointment and advising your service consultant of your transportation needs, your dealer can help minimize your inconvenience.

If your vehicle cannot be scheduled into the service department immediately, keep driving it until it can be scheduled for service, unless, of course, the problem is safety-related. If it is, please call your dealership, let them know this, and ask for instructions.

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If the dealer requests that you simply drop the vehicle off for service, you are urged to do so as early in the work day as possible to allow for same day repair.

## Transportation Options

Warranty service can generally be completed while you wait. However, if you are unable to wait Chevrolet helps minimize your inconvenience by providing several transportation options. Depending on the circumstances, your dealer can offer you one of the following:

### Shuttle Service

Participating dealers can provide you with shuttle service to get you to your destination with minimal interruption of your daily schedule. This includes a one way or round trip shuttle service to a destination up to 10 miles from the dealership.

### Public Transportation or Fuel Reimbursement

If your vehicle requires overnight warranty repairs, reimbursement (five day maximum) may be available for the use of public transportation such as taxi or bus. In addition, should you arrange transportation through a friend or relative, reimbursement for reasonable fuel expenses (five day maximum) may be available. Claim amounts should reflect actual costs and be supported by original receipts.

### Courtesy Rental Vehicle

Your dealer may arrange to provide you with a courtesy rental vehicle or reimburse you for a rental vehicle you obtained if your vehicle is kept for a warranty repair. Reimbursement will be limited to a maximum of $30.00 a day and must be supported by receipts. This requires that you sign and complete a rental agreement and meet state, local and rental vehicle provider requirements. Requirements vary and may include minimum age requirements, insurance coverage, credit card, etc. You are responsible for fuel usage charges and may also be responsible for taxes, levies, usage fees, excessive mileage or rental usage beyond the completion of the repair.

Generally it is not possible to provide a like-vehicle as a courtesy rental.

## Additional Program Information

Courtesy Transportation is available during the Bumper-to-Bumper warranty coverage period, but it *is not* part of the New Vehicle Limited Warranty. A separate booklet entitled “Warranty and Owner Assistance Information” furnished with each new vehicle provides detailed warranty coverage information.



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Courtesy Transportation is available only at participating dealers and all program options, such as shuttle service, may not be available at every dealer. Please contact you dealer for specific information about availability. All Courtesy Transportation arrangements will be administered by appropriate dealer personnel.

**Canadian Vehicles:** For warranty repairs during the Complete Vehicle Coverage period of the General Motors of Canada New Vehicle Limited Warranty, alternative transportation may be available under the Courtesy Transportation Program. Please consult your dealer for details.

*General Motors reserves the right to unilaterally modify, change or discontinue Courtesy Transportation at any time and to resolve all questions of claim eligibility pursuant to the terms and conditions described herein at its sole discretion.*

## Vehicle Data Collection and Event Data Records

Your vehicle, like other modern motor vehicles, has a number of sophisticated computer systems that monitor and control several aspects of the vehicle's performance. Your vehicle uses on-board vehicle computers to monitor emission control components to optimize fuel economy, to monitor conditions for airbag deployment and, if so equipped, to provide anti-lock braking and to help the driver control the vehicle in difficult driving situations. Some information may be stored during regular operations to facilitate repair of detected malfunctions; other information is stored only in a crash or near crash event by computer systems commonly called event data recorders (EDR).

In a crash or near crash event, computer systems, such as the Airbag Sensing and Diagnostic Module (SDM) in your vehicle may record information about the condition of the vehicle and how it was operated, such as engine speed, brake applications, throttle position, vehicle speed, seat belt usage, airbag readiness, airbag performance data, and the severity of a collision. This information has been used to improve vehicle crash performance and may be used to improve crash performance of future vehicles and driving safety.

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Unlike the data recorders on many airplanes, these on-board systems do not record sounds, such as conversation of vehicle occupants.

To read this information, special equipment is needed and access to the vehicle or the SDM is required. GM will not access information about a crash event or share it with others other than

- with the consent of the vehicle owner or, if the vehicle is leased, with the consent of the lessee,
- in response to an official request of police or similar government office,
- as part of GM's defense of litigation through the discovery process, or
- as required by law.

In addition, once GM collects or receives data, GM may

- use the data for GM research needs,
- make it available for research where appropriate confidentiality is to be maintained and need is shown, or
- share summary data which is not tied to a specific vehicle with non-GM organizations for research purposes.

Others, such as law enforcement, may have access to the special equipment that can read the information if they have access to the vehicle or SDM.

If your vehicle is equipped with OnStar, please check the OnStar subscription service agreement or manual for information on its operations and data collection.

# Reporting Safety Defects

## Reporting Safety Defects to the United States Government

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA), in addition to notifying General Motors.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer or General Motors.



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To contact NHTSA, you may either call the Auto Safety Hotline toll-free at 1-800-424-9393 (or 366-0123 in the Washington, D.C. area) or write to:

NHTSA, U.S. Department of Transportation
Washington, D.C. 20590

You can also obtain other information about motor vehicle safety from the hotline.

## Reporting Safety Defects to the Canadian Government

If you live in Canada, and you believe that your vehicle has a safety defect, you should immediately notify Transport Canada, in addition to notifying General Motors of Canada Limited. You may write to:

Transport Canada
330 Sparks Street
Tower C
Ottawa, Ontario K1A 0N5

## Reporting Safety Defects to General Motors

In addition to notifying NHTSA (or Transport Canada) in a situation like this, we certainly hope you'll notify us. Please call us at 1-800-222-1020, or write:

Chevrolet Motor Division
Chevrolet Customer Assistance Center
P.O. Box 33170
Detroit, MI 48232-5170

In Canada, please call us at 1-800-263-3777 (English) or 1-800-263-7854 (French). Or, write:

General Motors of Canada Limited
Customer Communication Centre, 163-005
1908 Colonel Sam Drive
Oshawa, Ontario L1H 8P7

## Service Publications Ordering Information

### Service Manuals

Service Manuals have the diagnosis and repair information on engines, transmission, axle, suspension, brakes, electrical, steering, body, etc.

RETAIL SELL PRICE: $120.00

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## Transmission, Transaxle, Transfer Case Unit Repair Manual

This manual provides information on unit repair service procedures, adjustments, and specifications for GM transmissions, transaxles, and transfer cases.

RETAIL SELL PRICE: $50.00

## Service Bulletins

Service Bulletins give technical service information needed to knowledgeably service General Motors cars and trucks. Each bulletin contains instructions to assist in the diagnosis and service of your vehicle.

In Canada, information pertaining to Product Service Bulletins can be obtained by contacting your General Motors dealer or by calling 1-800-GM-DRIVE (1-800-463-7483).

## Owner's Information

Owner publications are written specifically for owners and intended to provide basic operational information about the vehicle. The owner's manual will include the Maintenance Schedule for all models.

In-Portfolio: Includes a Portfolio, Owner's Manual, and Warranty Booklet.

RETAIL SELL PRICE: $35.00

Without Portfolio: Owner's Manual only.

RETAIL SELL PRICE: $25.00

## Current and Past Model Order Forms

Service Publications are available for current and past model GM vehicles. To request an order form, please specify year and model name of the vehicle.

### ORDER TOLL FREE: 1-800-551-4123 Monday-Friday 8:00 AM - 6:00 PM Eastern Time

For Credit Card Orders Only (VISA-MasterCard-Discover), visit Helm, Inc. on the World Wide Web at: www.helminc.com

Or you can write to:

Helm, Incorporated
P. O. Box 07130
Detroit, MI 48207

Prices are subject to change without notice and without incurring obligation. Allow ample time for delivery.

Note to Canadian Customers: All listed prices are quoted in U.S. funds. Canadian residents are to make checks payable in U.S. funds.



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